STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 103353

To: Jennifer Kim **Location:** CM1-2B19 **Art Unit:** 1617 **Friday, September 12, 2003** **Case Serial Number:** 10/075718	**From:** Beverly Shears **Location:** Biotech-Chem Library CM1-1E05 **Phone:** 308-4994 **beverly.shears@uspto.gov**

Search Notes

Access DB# 103353

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name Jennifer Kim Examiner # 77469 Date: 9/8/03
Art Unit 1617 Phone Number 308-2232 Serial Number 10/075718
Mail Box and Bldg Room Location 2D17 Results Format Preferred (circle): PAPER DISK E-MAIL
2B19
If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Radiosensitization by Indolocarbazole derivatives

Inventors (please provide full names): Chen

Earliest Priority Filing Date: 2/12/2001

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

1) Please search claims 23 – 33.

2) Please search by the structure A (active agents of claims 17 – 19 & 23 – 25) are known to treat any neoplastic growth (including cancer-).

3) Please display & provide registry # of active agents in claims 17-19 23-25.

THX.

JK

BEST AVAILABLE COPY

STAFF USE ONLY

Searcher: _____

Searcher Phone #: _____

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Vendors and cost where applicable

STN _____

Dialog _____

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM

Requestor's Name: _____ Serial Number: _____

Date: _____ Phone: _____ Art Unit: _____

Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).

STAFF USE ONLY

Date completed: 09-10-03

Searcher: Beverly e4994

Terminal time: _____

Elapsed time: _____

CPU time: _____

Total time: _____

Number of Searches: _____

Number of Databases: _____

Search Site

_____ STIC

_____ CM-1

_____ Pre-S

Type of Search

_____ N.A. Sequence

_____ A.A. Sequence

_____ Structure

_____ Bibliographic

Vendors

_____ IG

_____ STN

_____ Dialog

_____ APS

_____ Geninfo

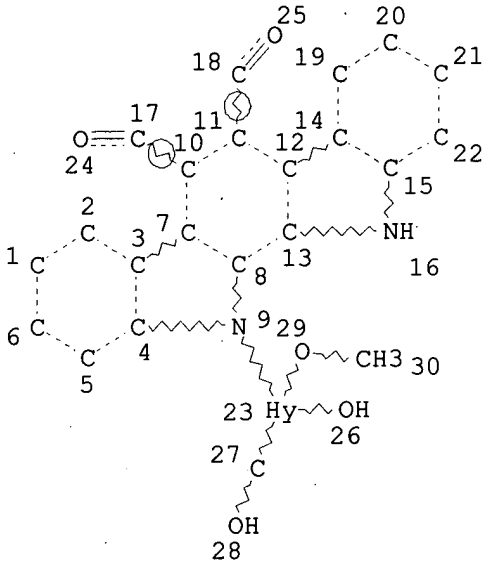
_____ SDC

_____ DARC/Questel

✓ Other CGN

Kim, J.
10/075718

(FILE 'REGISTRY' ENTERED AT 15:40:57 ON 09 SEP 2003)
L3 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 23
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E1 O AT 23

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE
L5 52 SEA FILE=REGISTRY SSS FUL L3

100.0% PROCESSED 6412 ITERATIONS 52 ANSWERS
SEARCH TIME: 00.00.02

(FILE 'HCAPLUS' ENTERED AT 15:43:14 ON 09 SEP 2003)
L6 79 S L5
L7 50 S L6 NOT (PY=>2001 OR PD=>20010212)

L7 ANSWER 1 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:811795 HCAPLUS
DOCUMENT NUMBER: 134:95046
TITLE: Recent developments of rebeccamycin analogues as topoisomerase I inhibitors and antitumor agents
AUTHOR(S): Prudhomme, Michelle
CORPORATE SOURCE: Laboratoire de Synthese, Electrosynthese et Etude de Systemes a Interet Biologique, Universite Blaise Pascal, UMR 6504 du CNRS, Aubiere, 63177, Fr.
SOURCE: Current Medicinal Chemistry (2000), 7(12), 1189-1212
CODEN: CMCHE7; ISSN: 0929-8673
PUBLISHER: Bentham Science Publishers

DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

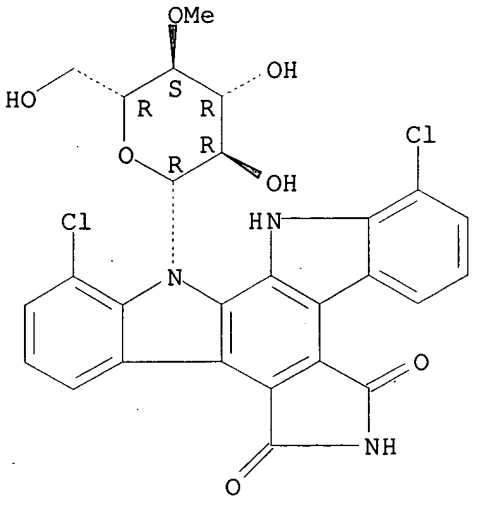
AB A review with 69 refs. DNA topoisomerases are essential for the survival of prokaryotic and eukaryotic organisms. Topoisomerases inhibitors, due to their capacity to induce DNA breaking, can exhibit interesting antitumor properties. While there are many potent antitumor agents which target topoisomerase II, relatively few families of specific topoisomerase I inhibitors have been identified. The present review describes a new family of topoisomerase I inhibitors, analogs of the bacterial metabolite rebeccamycin. These compds. possess an indolocarbazole chromophore onto which is attached a sugar residue. Important structure-activity relationships studies in this series have helped to understand the role of the carbohydrate moiety which is absolutely necessary for topoisomerase I poisoning, the influence of the stereochem. (.alpha. or .beta.) of its linkage to indole, the influence of the functionalities and substitutions on the sugar moiety and on the arom. framework have been investigated. In addn. to their action on DNA, rebeccamycin analogs may inhibit the SR kinase activity of topoisomerase I and therefore constitute a unique family of topoisomerase I poisons quite different from the well known camptothecins.

IT **93908-02-2D**, Rebeccamycin, analogs
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(recent developments of rebeccamycin analogs as topoisomerase I inhibitors and antitumor agents)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

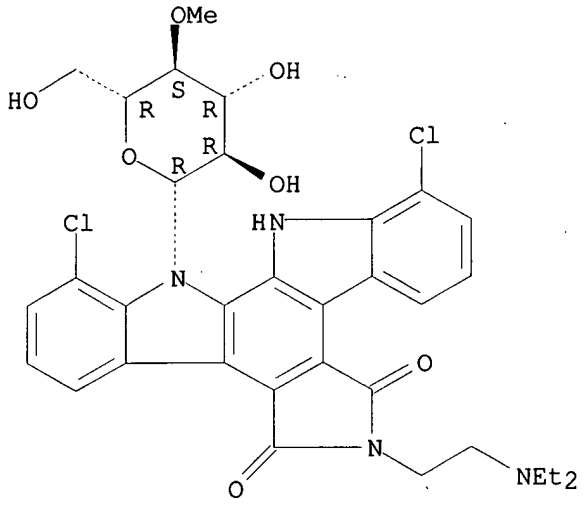
ACCESSION NUMBER: 2000:713583 HCAPLUS
DOCUMENT NUMBER: 134:65796
TITLE: Formaldehyde-Induced Alkylation of a 2'-Aminoglucose Rebeccamycin Derivative to Both A.cntdot.T and G.cntdot.C Base Pairs in DNA
AUTHOR(S): Bailly, Christian; Goossens, Jean-Francois; Laine, William; Anizon, Fabrice; Prudhomme, Michelle; Ren, Jinsong; Chaires, Jonathan B.
CORPORATE SOURCE: INSERM U-524 et Laboratoire de Pharmacologie Antitumorale du Centre Oscar Lambret, Lille, 59045, Fr.
SOURCE: Journal of Medicinal Chemistry (2000), 43(24), 4711-4720
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rebeccamycin derivs. represent a promising class of antitumor agents. In this series, two glycosylated indolocarbazoles, NB-506 and NSC-655649, are currently undergoing clin. trials. Their anticancer activities are assocd. with their capacities to interact with DNA and to inhibit DNA topoisomerases. Previous studies revealed that the planar indolocarbazole chromophore can intercalate into DNA, locating the appended carbohydrate residue in one of the two helical grooves, probably the minor groove as is the case with the anthracyclines and other DNA-binding antibiotics. The sugar residue contributes significantly to the DNA binding free energy of NB-506; However, the exact positioning of the glycosyl residue of rebeccamycin derivs. in the drug-DNA complex remains poorly understood. To better understand how glycosylated indolocarbazoles interact with DNA, we investigated the interaction of a rebeccamycin deriv. (85) bearing a 2'-amino group on the sugar residue. We show that the presence of the 2'-amino function permits the formation of covalent drug-DNA complexes in the presence of formaldehyde. Complementary biochem. and spectroscopic measurements attest that 85 reacts covalently with the 2-amino group of guanines exposed in the minor groove of the double helix, as is the case with daunomycin. In contrast to daunomycin, 85 also forms cross-links with an oligonucleotide contg. only A.cntdot.T base pairs. The covalent binding to A.cntdot.T base pairs was detected using a gel mobility shift assay and was independently confirmed by thermal denaturation studies and by fluorescence measurements using a series of synthetic polynucleotides. The HCHO-mediated alkylation reaction of the drug with A.cntdot.T base pairs apparently involves the 6-amino group of adenines exposed in the major groove whereas the covalent attachment to G.cntdot.C base pairs implicates the 2-amino group of guanines situated in the opposite minor groove. Therefore, the results suggest that either the drug is able to switch grooves in response to sequence or it can simultaneously bind to both the minor and major grooves of the double helix. This study will help to guide the rational design of new DNA-binding antitumor indolocarbazole drugs and also provides a general exptl. approach for probing minor vs. major groove interactions between small mols. and DNA.
IT **119673-08-4**, NSC 655649
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(formaldehyde-induced alkylation of a 2'-aminoglucose

rebeccamycin deriv. to both A.cntdot.T and G.cntdot.C base pairs in DNA)

RN 119673-08-4 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:459763 HCAPLUS

DOCUMENT NUMBER: 133:222613

TITLE: Recent developments in the synthesis of indolocarbazoles, topoisomerase I inhibitors

AUTHOR(S): Prudhomme, M.; Anizon, F.; Moreau, P.

CORPORATE SOURCE: Laboratoire .mchlt. Synthese, Electrosynthese et Etude de Systemes a Interet Biologique .mchgt., UMR 6504, Laboratoire .mchlt. Synthese, Electrosynthese et Etude de Systemes a Interet Biologique .mchgt., UMR 6504, Universite Blaise Pascal-CNRS, Aubiere, 63177, Fr.

SOURCE: Recent Research Developments in Synthetic Organic Chemistry (1999), 2, 79-106
CODEN: RDSCF5

PUBLISHER: Transworld Research Network

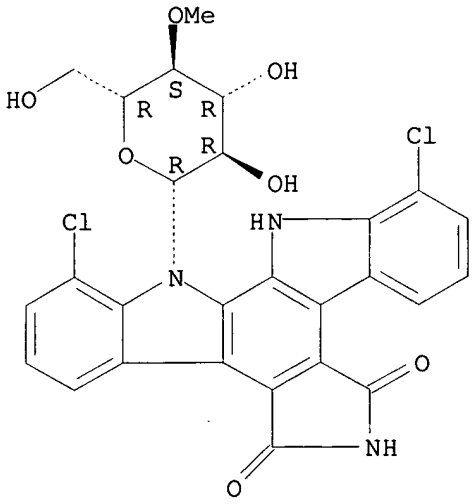
DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 66 refs. on the indolocarbazoles isolated from microorganisms and the two methods used for the prepn. of indolocarbazole topoisomerase I inhibitors: semi-syntheses from natural metabolites and total syntheses. A brief summary of the parameters in the indolocarbazole series necessary to induce topoisomerase I inhibition and antiproliferative properties is presented.

IT **93908-02-2P**, Rebeccamycin
RL: SPN (Synthetic preparation); PREP (Preparation)
(related compds.; recent developments in synthesis of indolocarbazole topoisomerase I inhibitors)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:459470 HCAPLUS
DOCUMENT NUMBER: 133:144317
TITLE: UCN-01 (7-hydroxystaurosporine) and other indolocarbazole compounds: a new generation of anti-cancer agents for the new century?
AUTHOR(S): Akinaga, Shiro; Sugiyama, Kazuyo; Akiyama, Tadakazu
CORPORATE SOURCE: Pharmaceutical Research Institute, Kyowa Hakko Kogyo Co., Ltd., Shizuoka, 411-8731, Japan
SOURCE: Anti-Cancer Drug Design (2000), 15(1), 43-52
CODEN: ACDDEA; ISSN: 0266-9536
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with over 70 refs. UCN-01 (7-hydroxystaurosporine) is a protein kinase inhibitor which is under development as an anti-cancer agent in the USA and Japan. Although UCN-01 was originally isolated from the culture broth of Streptomyces sp. as a protein kinase C-selective inhibitor, its ultimate target as an anti-cancer agent remains elusive. As a single agent, UCN-01 exhibits two key biochem. effects, namely accumulation of cells in the G1 phase of the cell cycle and induction of apoptosis. Both

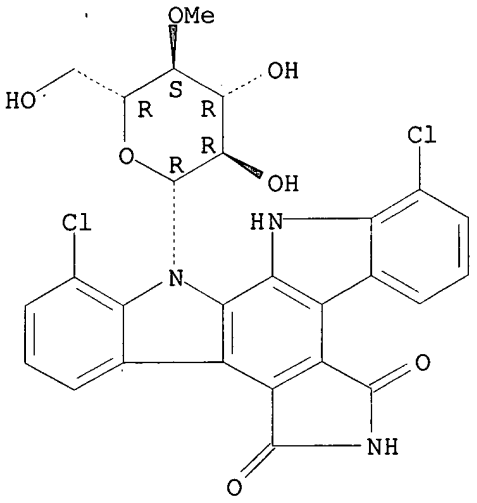
these effects may be important for its anti-cancer activity. As a modulator, UCN-01 enhances the cytotoxicity of other anti-cancer drugs such as DNA-damaging agents and anti-metabolite drugs through putative abrogation of G2 and/or S phase accumulation induced by these anti-cancer agents. Currently, in addn. to UCN-01, four other indolocarbazole anti-cancer drugs-two protein kinase inhibitors, CGP 41251, CEP-751, and two DNA-damaging agents, NB-506 and a Rebeccamycin, are undergoing clin. investigations in the USA, Europe or Japan. In this review, we would like to address the differences and similarities of these indolocarbazole compds. as anti-cancer agents with regard to their mechanism(s) of action, the effects on cell cycle progression, induction of apoptosis and modulation of drug sensitivity.

IT **93908-02-2**, Rebeccamycin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(UCN-01 (7-hydroxystaurosporine) and other indolocarbazole compds.: new generation of anti-cancer agents)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

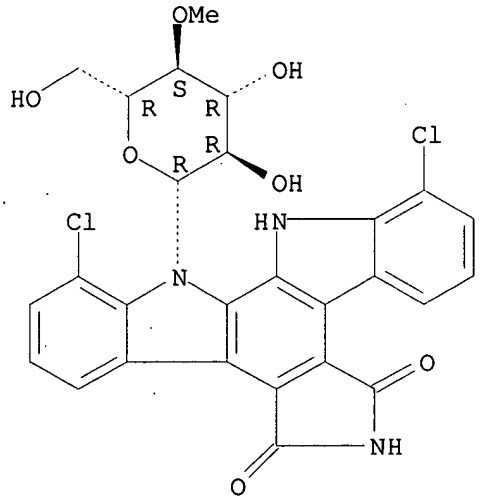
ACCESSION NUMBER: 2000:220889 HCAPLUS

DOCUMENT NUMBER: 133:114678

TITLE: Recognition and cleavage of DNA by rebeccamycin- or benzopyridoquinoxaline conjugated of triple helix-forming oligonucleotides

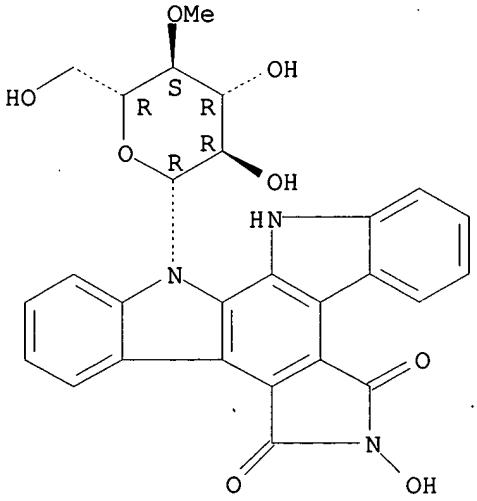
AUTHOR(S): Arimondo, P. B.; Moreau, P.; Boutorine, A.; Bailly, C.; Prudhomme, M.; Sun, J.-S.; Garestier, T.; Helene, C.

CORPORATE SOURCE: INSERM U201, UMR 8646 CNRS-Museum National



RN 183747-10-6 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:712253 HCAPLUS
DOCUMENT NUMBER: 132:189366
TITLE: Targeting topoisomerase I cleavage to specific sequences of DNA by triple helix-forming oligonucleotide conjugates. A comparison between

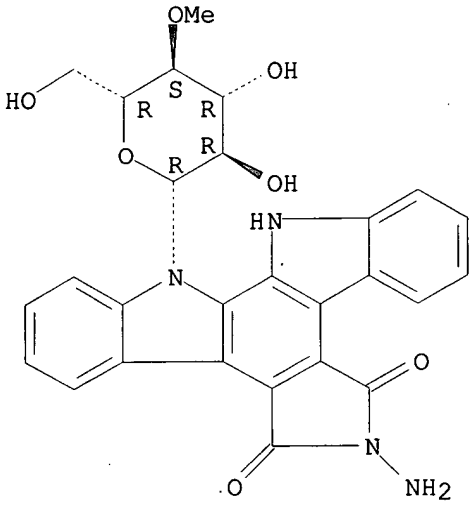
d'Histoire Naturelle, Laboratoire de Biophysique, Paris, 75231, Fr.
SOURCE: Bioorganic & Medicinal Chemistry (2000), 8(4), 777-784
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Indolocarbazole and benzopyridoquinoxaline derivs. have been shown to have anti-tumor activity and to stimulate DNA topoisomerase I-mediated cleavage. Two indolocarbazole compds. (R-6 and R-95) and one benzopyridoquinoxaline deriv. (BPQ(1256)) were covalently attached to the 3'-end of a 16mer triple helix-forming oligonucleotide (TFO). These conjugates bind to DNA with a higher affinity than the unsubstituted oligonucleotides. Furthermore, they induce topoisomerase I-mediated and triplex-directed DNA cleavage in a sequence-specific manner.

IT **183747-09-3**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(recognition and cleavage of DNA by rebeccamycin- or benzopyridoquinoxaline conjugates of triple helix-forming oligonucleotides)

RN 183747-09-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:167493 HCAPLUS
DOCUMENT NUMBER: 132:175842
TITLE: The use of staurosporine analogs for enhancing

neurotrophin activity
INVENTOR(S): Broughton, Howard Barff; Harper, Sarah Jane; Pollack, Scott Jeffrey
PATENT ASSIGNEE(S): Merck Sharp and Dohme Limited, UK
SOURCE: Brit. UK Pat. Appl., 27 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2337702	A1	19991201	GB 1999-12318	19990526

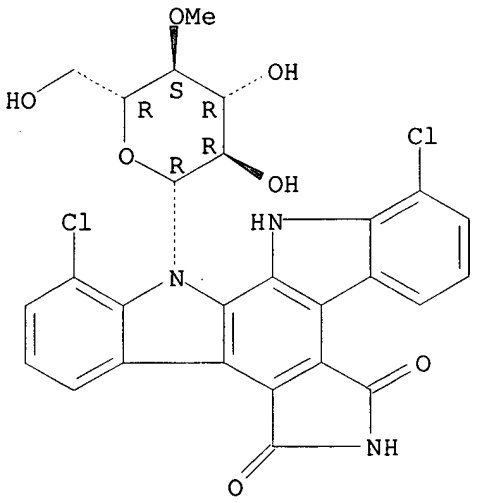
PRIORITY APPLN. INFO.: GB 1998-11624 19980529

AB The staurosporine analogs BE 13793C, a monosaccharide deriv. thereof, rebaccamycin, and NB 506 are indicated for new therapeutic uses in conditions of neural degeneration such as Alzheimer's disease, Huntington's chorea, epilepsy, and brain and spinal cord injuries. The compds. are believed to potentiate neurotrophin-3 action without inhibiting tyrosine kinase.

IT **93908-02-2**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(staurosporine analogs for enhancing neurotrophin activity for treatment of neural degeneration)

RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 7 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:127375 HCAPLUS
DOCUMENT NUMBER: 132:302925

TITLE: Cellular uptake and interaction with purified membranes of rebeccamycin derivatives
AUTHOR(S): Goossens, J.-F.; Henichart, J.-P.; Anizon, F.; Prudhomme, M.; Dugave, C.; Riou, J.-F.; Bailly, C.
CORPORATE SOURCE: Laboratoire de Chimie Analytique, Faculte de Pharmacie, Lille, 59006, Fr.
SOURCE: European Journal of Pharmacology (2000), 389(2/3), 141-146
CODEN: EJPHAZ; ISSN: 0014-2999
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Rebeccamycin is an antitumor antibiotic possessing a DNA-intercalating indolocarbazole chromophore linked to a glycosyl residue. The carbohydrate moiety of rebeccamycin and related synthetic analogs, such as the potent antitumor drug NB-506 (6-N-formylamino-12,13-dihydro-1,11-dihydroxy-13-(.beta.-d-glucopyranosyl)-5H-indolo[2,3-a]pyrrolo-[3,4-c]carbazole-5,7-(6H)-dione), is a key element for both DNA-binding and inhibition of DNA topoisomerase I. In this study, we have investigated the cellular uptake of rebeccamycin derivs. and their interaction with purified membranes. The transport of radiolabeled [3H]dechlorinated rebeccamycin was studied using the human leukemia HL60 and melanoma B16 cell lines as well as two murine leukemia cell lines sensitive (P388) or resistant (P388CPT5) to camptothecin. In all cases, the uptake is rapid but limited to about 6% of the drug mols. In HL60 cells, the uptake entered a steady-state phase of intracellular accumulation of about 0.26.+-.0.05 pmol/106 cells, which persisted to at least 90 min. The efflux of exchangeable radiolabeled mols. was relatively weak. Fluorescence studies were performed to compare the interaction of a rebeccamycin deriv. and its aglycon with membranes purified from HL60 cells. The glycosylated drug mols. bound to the cell membranes can be extd. upon washing with buffer or by adding an excess of DNA. In contrast, the indolocarbazole drug lacking the carbohydrate domain remains tightly bound to the membranes with very little or no exchange upon the addn. of DNA. The membrane transport and binding properties of indolocarbazole drugs related to rebeccamycin are reminiscent to those of other DNA-intercalating antitumor agents. The uptake most likely occurs via a passive diffusion through the plasma membranes and the glycosyl residue of the drug plays an essential role for the translocation of the drug from the membranes to the internal cell components, such as DNA.

IT **93908-02-2D**, Rebeccamycin, derivs. **183747-10-6**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cellular uptake and interaction with membranes of rebeccamycin derivs.)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

a rebeccamycin derivative and camptothecin

AUTHOR(S): Arimondo, Paola B.; Bailly, Christian; Boutorine, Alexandre; Sun, Jian-Sheng; Garestier, Therese; Helene, Claude

CORPORATE SOURCE: Laboratoire de biophysique, Paris, 75231, Fr.

SOURCE: Comptes Rendus de l'Academie des Sciences, Serie III: Sciences de la Vie (1999), 322(9), 785-790
CODEN: CRASEV; ISSN: 0764-4469

PUBLISHER: Editions Scientifiques et Medicales Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

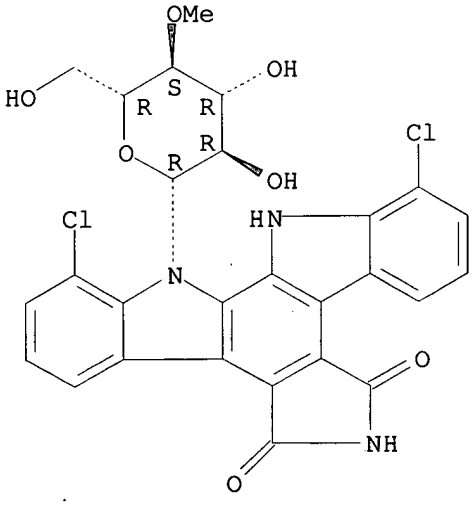
AB Topoisomerase I is an ubiquitous DNA cleaving enzyme and an important therapeutic target in cancer chemotherapy for the camptothecins as well as for indolo-carbazole antibiotics such as rebeccamycin and its synthetic derivs., which stabilize the cleaved DNA-topoisomerase I complex. The covalent linkage of a triple helix-forming oligonucleotide to camptothecin or to the indolocarbazole deriv. R-6 directs DNA cleavage by topoisomerase I to specific sequences. Sequence-specific recognition of DNA is achieved by the triple helix-forming oligonucleotide, which binds to the major groove of double-helical DNA and positions the drug at a specific site. The efficacy of topoisomerase I-induced DNA cleavage mediated by the rebeccamycin-conjugate and the camptothecin-conjugate was compared and related to the intrinsic potency of the isolated drugs.

IT **93908-02-2D**, Rebeccamycin, conjugate with oligonucleotide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(efficacy of topoisomerase I-induced DNA cleavage by the rebeccamycin and camptothecin conjugates)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

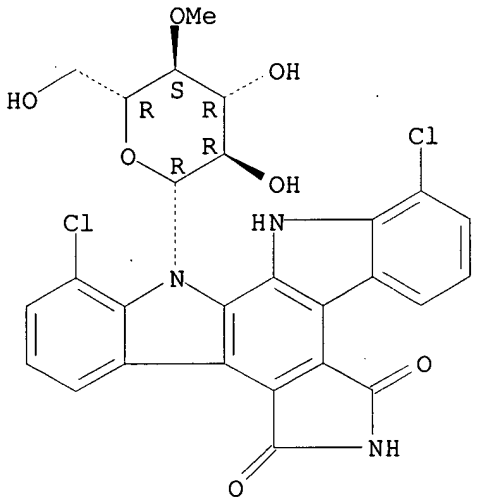
L7 ANSWER 9 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:366106 HCAPLUS
DOCUMENT NUMBER: 131:165071
TITLE: The Camptothecin-Resistant Topoisomerase I Mutant F361S Is Cross-Resistant to Antitumor Rebeccamycin Derivatives. A Model for Topoisomerase I Inhibition by Indolocarbazoles
AUTHOR(S): Bailly, Christian; Carrasco, Carolina; Hamy, Francois; Vezin, Herve; Prudhomme, Michelle; Saleem, Ahamed; Rubin, Eric
CORPORATE SOURCE: Laboratoire de Pharmacologie Antitumorale du Centre Oscar Lambret U-524, INSERM IRCL Place de Verdun, Lille, Fr.
SOURCE: Biochemistry (1999), 38(27), 8605-8611
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB DNA topoisomerase I is a major cellular target for antitumor indolocarbazole derivs. (IND) such as the antibiotic rebeccamycin and the synthetic analog NB-506 which is undergoing phase I clin. trials. We have investigated the mechanism of topoisomerase I inhibition by a rebeccamycin analog, R-3, using the wild-type human topoisomerase I and a well-characterized recombinant enzyme, F361S. The catalytic activity of this mutant remains fully intact, but the enzyme is resistant to inhibition by camptothecin (CPT). Here we show that the mutated enzyme is cross-resistant to the rebeccamycin analog. Despite their profound structural differences, CPT and R-3 interfere similarly with the activity of the wild-type and mutant topoisomerase I enzymes, and the drug-induced cleavable complexes are equally sensitive to the NaCl concn. CPT and IND likely recognize identical structural elements of the topoisomerase I-DNA covalent complex; however, differences do exist in terms of sequence-specificity of topoisomerase I-mediated DNA cleavage. For the first time, a mol. model showing that CPT and IND share common steric and electronic features is proposed. The model helps to identify a specific pharmacophore for topoisomerase I inhibitors.

IT **93908-02-2D**, Rebeccamycin, analog **183747-10-6**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(topoisomerase I inhibition by camptothecin and rebeccamycin analog R-3: antitumor cross-resistance and modeling)

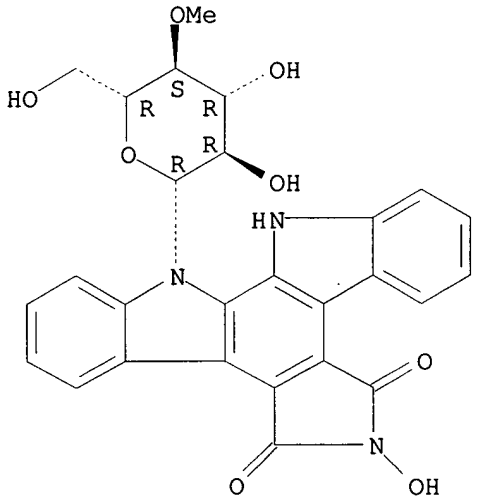
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 183747-10-6 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:327920 HCAPLUS
DOCUMENT NUMBER: 131:67656
TITLE: Calories from carbohydrates: energetic contribution of the carbohydrate moiety of rebeccamycin to DNA binding and the effect of

its orientation on topoisomerase I inhibition

AUTHOR(S): Bailly, Christian; Qu, Xiaogang; Graves, David E.; Prudhomme, Michelle; Chaires, Jonathan B.

CORPORATE SOURCE: Centre Oscar Lambret et INSERM U-524, Lille, 59045, Fr.

SOURCE: Chemistry & Biology (1999), 6(5), 277-286
CODEN: CBOLE2; ISSN: 1074-5521

PUBLISHER: Current Biology Publications

DOCUMENT TYPE: Journal

LANGUAGE: English

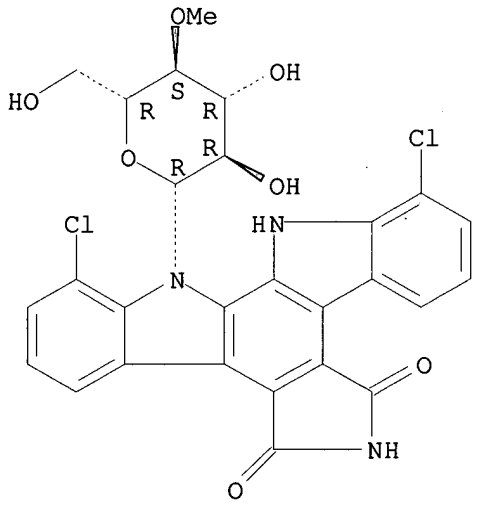
AB Only a few antitumor drugs inhibit the DNA breakage-reunion reaction catalyzed by topoisomerase. One is the camptothecin deriv. topotecan that has recently been used clin. Others are the glycosylated antibiotic rebeccamycin and its synthetic analog NB-506, which is presently in phase I of clin. trials. Unlike the camptothecins, rebeccamycin-type compds. bind to DNA. We set out to elucidate the mol. basis of their interaction with duplex DNA, with particular emphasis on the role of the carbohydrate residue. We compared the DNA-binding and topoisomerase-I-inhibition activities of two isomers of rebeccamycin that contain a galactose residue attached to the indolocarbazole chromophore via an .alpha. (axial) or a .beta. (equatorial) glycosidic linkage. The modification of the stereochem. of the chromophore-sugar linkage results in a marked change of the DNA-binding and topoisomerase I poisoning activities. The inverted configuration at the C-1' of the carbohydrate residue abolishes intercalative binding of the drug to DNA thereby drastically reducing the binding affinity. Consequently, the .alpha. isomer has lost the capacity to induce topoisomerase-I-mediated cleavage of DNA. Comparison with the aglycon allowed us to det. the energetic contribution of the sugar residue. The optimal interaction of rebeccamycin analogs with DNA is controlled to a large extent by the stereochem. of the sugar residue. The results clarify the role of carbohydrates in stereospecific drug-DNA interactions and provide valuable information for the rational design of new rebeccamycin-type antitumor agents.

IT **93908-02-2D**, Rebeccamycin, analogs
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(contribution of rebeccamycin carbohydrate moiety to DNA binding and topoisomerase I inhibition)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

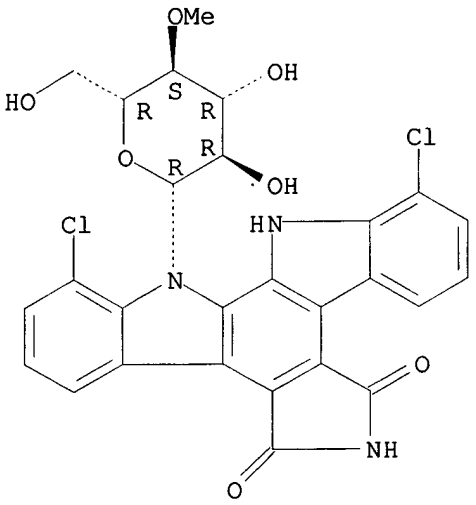
L7 ANSWER 11 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:261310 HCAPLUS
DOCUMENT NUMBER: 130:325297
TITLE: Synthesis, Mode of Action, and Biological Activities of Rebeccamycin Bromo Derivatives
AUTHOR(S): Moreau, Pascale; Anizon, Fabrice; Sancelme, Martine; Prudhomme, Michelle; Severe, Daniele; Riou, Jean-Francois; Goossens, Jean-Francois; Henichart, Jean-Pierre; Bailly, Christian; Labourier, Emmanuel; Tazzi, Jamal; Fabbro, Doriano; Meyer, Thomas; Aubertin, A. M.
CORPORATE SOURCE: Synthese Electrosynthese et Etude de Systemes a Interet Biologique, Universite Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Journal of Medicinal Chemistry (1999), 42(10), 1816-1822
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Bromo analogs of the natural metabolite rebeccamycin with and without a Me substituent on the imide nitrogen were synthesized. The effects of the drugs on protein kinase C, the binding to DNA, and the effect on topoisomerase I were detd. The drugs' uptake and their antiproliferative activities against P388 leukemia cells sensitive and resistant to camptothecin, their antimicrobial activity against a Gram-pos. bacterium (B. cereus), and their anti-HIV-1 activity were measured and compared to those of the chlorinated and dechlorinated analogs. Dibrominated imide shows a remarkable activity against topoisomerase I, affecting both the kinase and DNA cleavage activity of the enzyme. The marked cytotoxic potency of this compd. depends essentially on its capacity to inhibit topoisomerase I.

IT **93908-02-2 156330-65-3 196297-71-9**
196297-72-0 205386-72-7
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(prepn., mode of action, and biol. activities of rebeccamycin bromo derivs.)

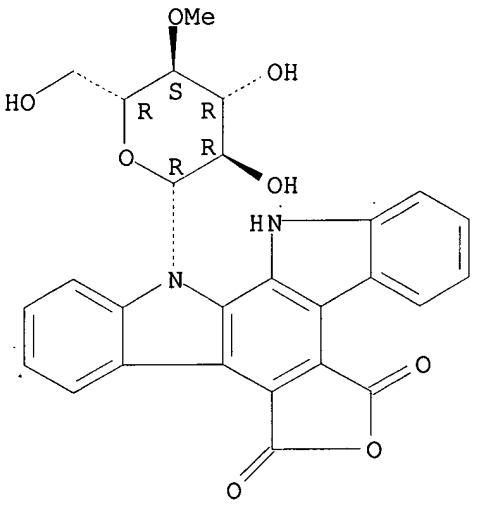
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



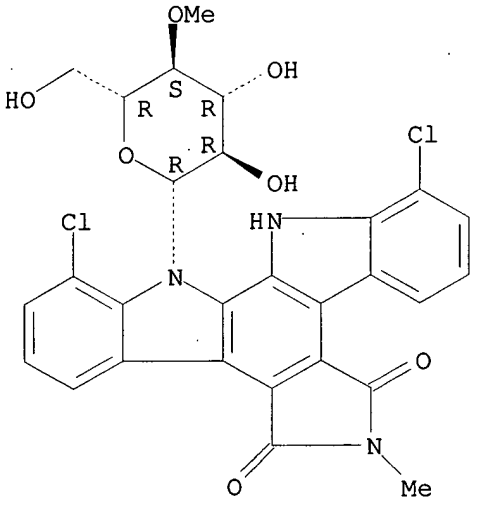
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



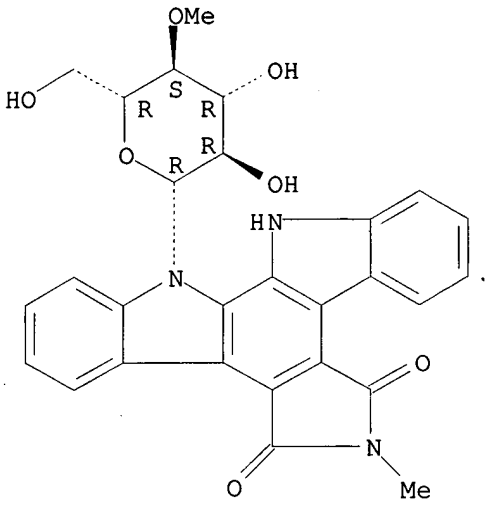
RN 196297-71-9 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



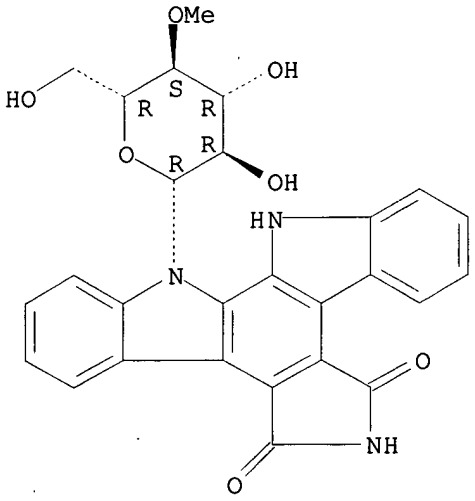
RN 196297-72-0 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



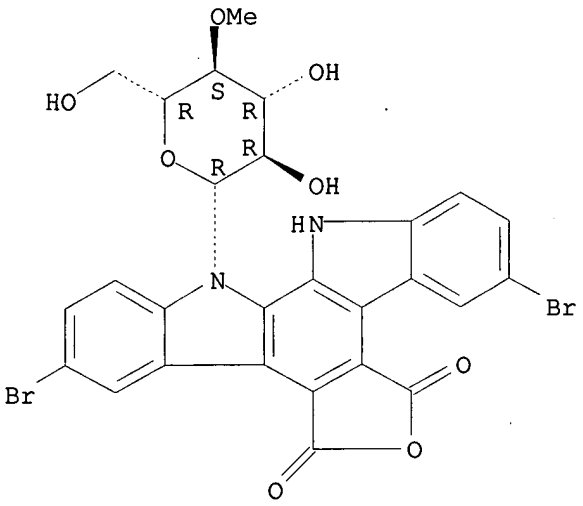
RN 205386-72-7 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



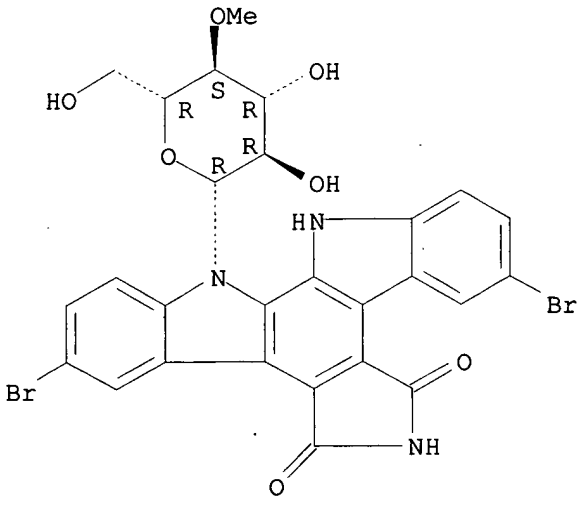
IT **205386-78-3**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(prepn., mode of action, and biol. activities of rebeccamycin bromo derivs.)
RN 205386-78-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 3,9-dibromo-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **223750-63-8P 223750-64-9P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn., mode of action, and biol. activities of rebeccamycin bromo derivs.)
RN 223750-63-8 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 3,9-dibromo-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

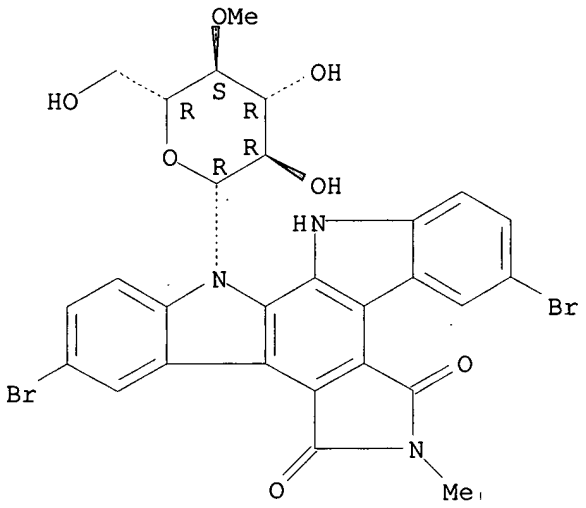
Absolute stereochemistry.



RN 223750-64-9 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione,

3,9-dibromo-12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

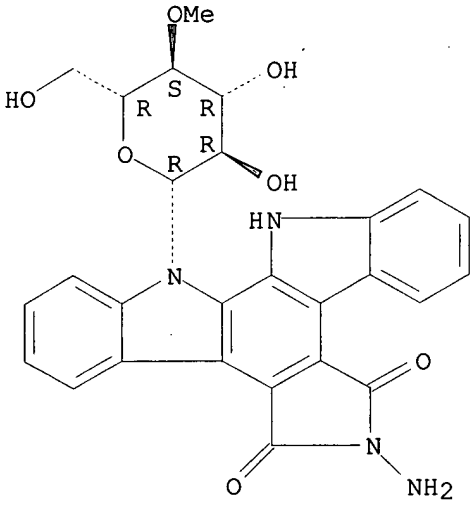
L7 ANSWER 12 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:197835 HCAPLUS
DOCUMENT NUMBER: 131:13360
TITLE: Enhanced binding to DNA and topoisomerase I inhibition by an analog of the antitumor antibiotic rebeccamycin containing an amino sugar residue
AUTHOR(S): Bailly, Christian; Qu, Xiaogang; Anizon, Fabrice; Prudhomme, Michelle; Riou, Jean-Francois; Chaires, Jonathan B.
CORPORATE SOURCE: Laboratoire de Pharmacologie Antitumorale du Centre Oscar Lambret, Institut National de la Sante et de la Recherche Medicale U-124, Lille, Fr.
SOURCE: Molecular Pharmacology (1999), 55(2), 377-385
CODEN: MOPMA3; ISSN: 0026-895X
PUBLISHER: American Society for Pharmacology and Experimental Therapeutics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Many antitumor agents contain a carbohydrate side chain appended to a DNA-intercalating chromophore. This is the case with anthracyclines such as daunomycin and also with indolocarbazoles including the antibiotic rebeccamycin and its tumor active analog, NB506. In each case, the glycoside residue plays a significant role in the interaction of the drug with the DNA double helix. In this study we show that the DNA-binding affinity and sequence selectivity of a rebeccamycin deriv. can be enhanced by replacing the glucose residue with a 2'-aminoglucose moiety. The drug-DNA interactions

were studied by thermal denaturation, fluorescence, and footprinting expts. The thermodn. parameters indicate that the newly introduced amino group on the glycoside residue significantly enhanced binding to DNA by increasing the contribution of the polyelectrolyte effect to the binding free energy, but does not appear to participate in any specific mol. contacts. The energetic contribution of the amino group of the rebeccamycin analog was found to be weaker than that of the sugar amino group of daunomycin, possibly because the indolocarbazole deriv. is only partially charged at neutral pH. Topoisomerase I-mediated DNA cleavage studies reveal that the OH .fwdarw. NH2 substitution does not affect the capacity of the drug to stabilize enzyme-DNA covalent complexes. Cytotoxicity studies with P388 leukemia cells sensitive or resistant to camptothecin suggest that topoisomerase I represents a privileged intracellular target for the studied compds. The role of the sugar amino group is discussed. The study provides useful guidelines for the development of a new generation of indolocarbazole-based antitumor agents.

IT **183747-09-3P 226557-22-8P**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(enhanced binding to DNA and topoisomerase I inhibition by an analog of the antitumor antibiotic rebeccamycin contg. an amino sugar residue)

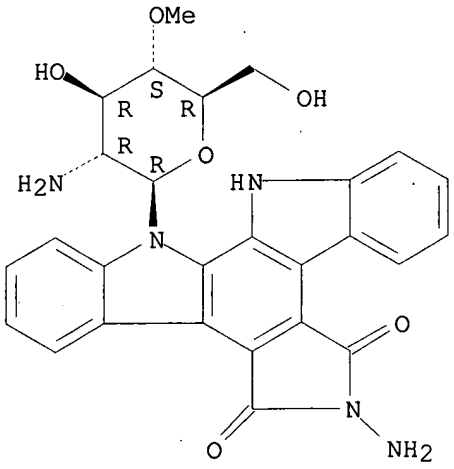
RN 183747-09-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



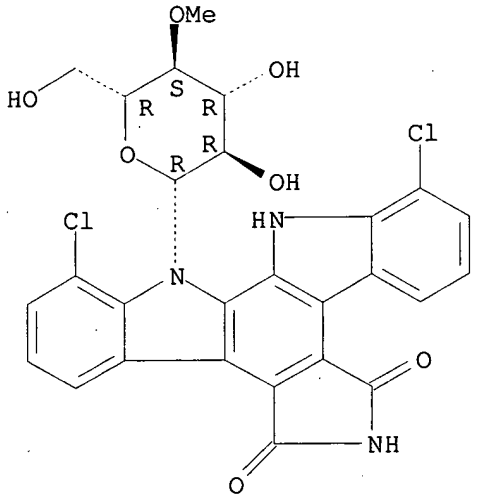
RN 226557-22-8 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-12-(2-amino-2-deoxy-4-O-methyl-.beta.-D-glucopyranosyl)-12,13-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **93908-02-2,** Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(enhanced binding to DNA and topoisomerase I inhibition by an analog of the antitumor antibiotic rebeccamycin contg. an amino sugar residue)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Searcher : Shears 308-4994

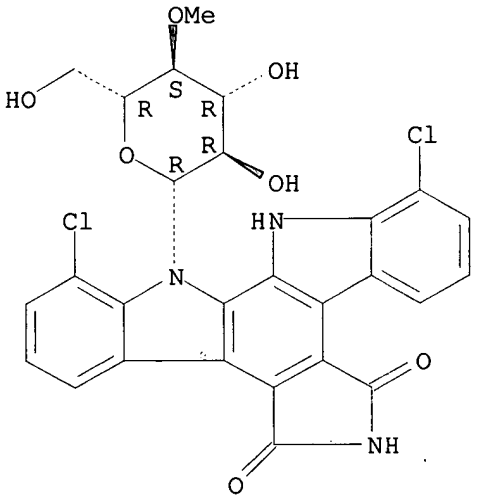
L7 ANSWER 13 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:152825 HCAPLUS
DOCUMENT NUMBER: 130:237774
TITLE: Synthesis of Rebeccamycin and 11-Dechlororebeccamycin
AUTHOR(S): Faul, Margaret M.; Winneroski, Leonard L.; Krumrich, Christine A.
CORPORATE SOURCE: Chemical Process Research and Development Division, Lilly Research Laboratories A Division, Eli Lilly and Company, Indianapolis, IN, 46285-4813, USA
SOURCE: Journal of Organic Chemistry (1999), 64(7), 2465-2470
CODEN: JOCEAH; ISSN: 0022-3263
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glycosylated 7-chloroindole-3-acetamide, prepd. in four steps and 26% yield from 7-chloroindole, was condensed with Me 7-chloroindole-3-glyoxylate and Me indole-3-glyoxylate to provide bisindolylmaleimides in 86% and 84% yield, resp. Oxidn. of the bisindolylmaleimides followed by debenzylation provided a new approach to the synthesis of rebeccamycin and completed for the first time a synthesis of 11-dechlororebeccamycin.

IT **93908-02-2P 97938-09-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of rebeccamycin and dechlororebeccamycin)

RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

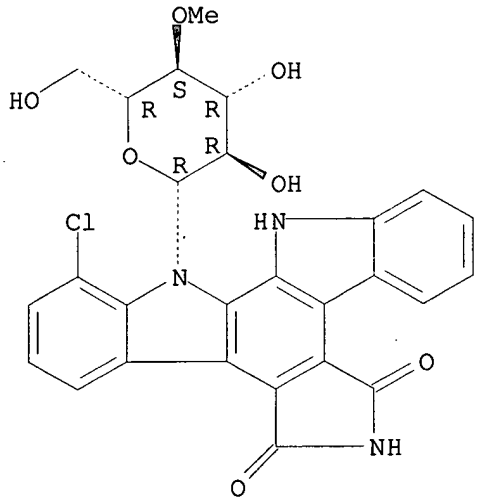
Absolute stereochemistry. Rotation (+).



RN 97938-09-5 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1-chloro-12,13-dihydro-13-(4-O-methyl-.beta.-D-glucopyranosyl)-

(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:65714 HCAPLUS
DOCUMENT NUMBER: 130:246449
TITLE: Poisoning of topoisomerase I by an antitumor indolocarbazole drug: Stabilization of topoisomerase I-DNA covalent complexes and specific inhibition of the protein kinase activity
AUTHOR(S): Labourier, Emmanuel; Riou, Jean-Francois; Prudhomme, Michelle; Carrasco, Carolina; Bailly, Christian; Tazi, Jamal
CORPORATE SOURCE: Institut de Genetique Moleculaire, Universite de Montpellier II, Montpellier, 34293, Fr.
SOURCE: Cancer Research (1999), 59(1), 52-55
CODEN: CNREA8; ISSN: 0008-5472
PUBLISHER: AACR Subscription Office
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have investigated the mechanism of topoisomerase I inhibition by an indolocarbazole deriv., R-3. The compd. is cytotoxic to P388 leukemia cells, but not to P388CPT5 camptothecin-resistant cells having a deficient topoisomerase I. R-3 can behave both as a specific topoisomerase I inhibitor trapping the cleavable complexes and as a nonspecific inhibitor of a DNA-processing enzyme acting via DNA binding. In addn., the drug is a potent inhibitor of the kinase activity of topoisomerase I. Unlike camptothecin, R-3 completely inhibits the phosphorylation of SF2/ASF, a member of the SR protein family, in the absence of DNA. The inhibitory effect is also obsd. using mutant enzyme Y723F that lacks DNA cleavage/religation activity but does not affect phosphotransferase activity,

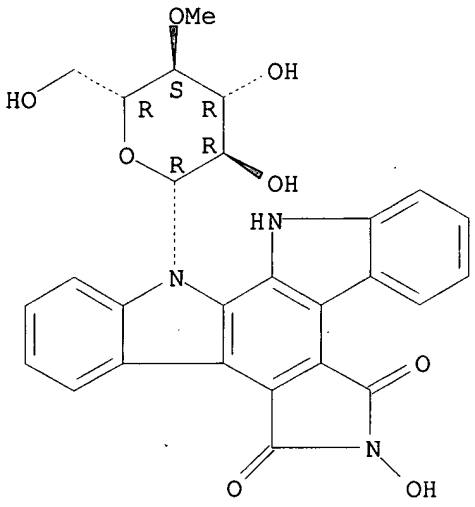
indicating, therefore, that R-3 acts independently at both DNA cleavage and protein kinase sites. R-3 is the only compd. known thus far that interferes specifically with the kinase activity of topoisomerase I and not with other kinases, such as protein kinase C and the cdc2 kinase. The study reinforces the view that topoisomerase I is a dual enzyme with a DNA cleavage site juxtaposed to a functionally independent kinase site and shows for the first time that indolocarbazole drugs can inhibit both the DNA cleavage/religation and kinase activities of the enzyme.

IT **183747-10-6**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antitumor indolocarbazole compd. R-3 inhibits DNA cleavage/ligation and kinase activities of topoisomerase I)

RN 183747-10-6 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1999:59494 HCAPLUS

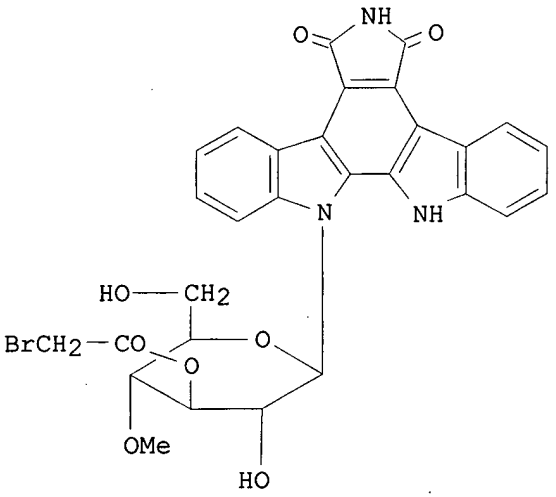
DOCUMENT NUMBER: 130:196847

TITLE: Syntheses and Biological Activities of Rebeccamycin Analogs. Introduction of a Halogenoacetyl Substituent

AUTHOR(S): Moreau, Pascale; Anizon, Fabrice; Sancelme, Martine; Prudhomme, Michelle; Bailly, Christian; Severe, Daniele; Riou, Jean-Francois; Fabbro, Doriano; Meyer, Thomas; Aubertin, Anne-Marie

CORPORATE SOURCE: Synthese Electrosynthese et Etude de Systemes a Interet Biologique, Universite Blaise Pascal,

Aubiere, 63177, Fr.
SOURCE: Journal of Medicinal Chemistry (1999), 42(4), 584-592
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB In the course of studying structure-activity relationships on rebeccamycin analogs, a series of compds. bearing a halogeno-acetyl substituent were synthesized with the expectation of increasing the interaction with DNA, possibly via covalent reaction with the double helix. Two rebeccamycin analogs bearing an acetyl instead of a bromo-acetyl substituent were prepd. to gain an insight into the role of the halogen atom. The new compds. show very little effect on protein kinase C and no covalent reaction with DNA was detected. However, the drugs behave as typical topoisomerase I poisons, and they are significantly more toxic toward P388 leukemia cells than to P388/CPT5 cells resistant to camptothecin. The introduction of a bromo- or chloro-acetyl substituent does not affect the capacity of the drug to interfere with topoisomerase I either in vitro or in cells. One of the bromo-acetyl derivs., (I), is the most cytotoxic rebeccamycin deriv. among the hundred of derivs. we have synthesized to date. In addn., we detd. the antimicrobial activities against two Gram-pos. bacteria, Bacillus cereus and Streptomyces chartreusis, and against the Gram-neg. bacterium Escherichia coli. The effect of the drugs on Candida albicans yeast growth and their anti-HIV-1 activities were also measured.

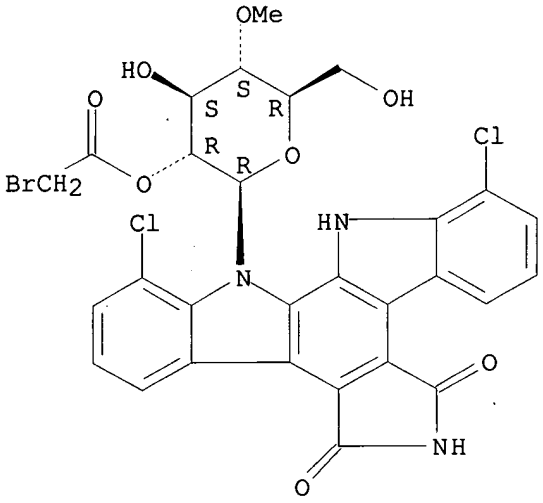
IT **220726-71-6P 220726-73-8P 220726-75-0P 220726-77-2P 220726-79-4P 220726-81-8P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(prepn. and biol. activity of as rebeccamycin analogs)

RN 220726-71-6 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12-[2-O-(bromoacetyl)-4-O-methyl-.beta.-D-glucopyranosyl]-1,11-dichloro-12,13-dihydro- (9CI) (CA INDEX NAME)

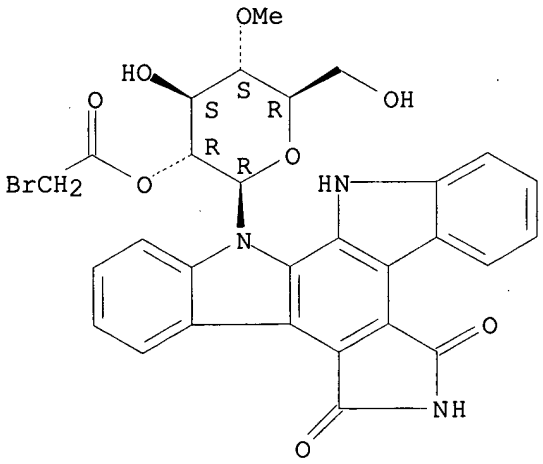
Absolute stereochemistry.



RN 220726-73-8 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12-[2-O-(bromoacetyl)-4-O-methyl-.beta.-D-glucopyranosyl]-12,13-dihydro- (9CI) (CA INDEX NAME)

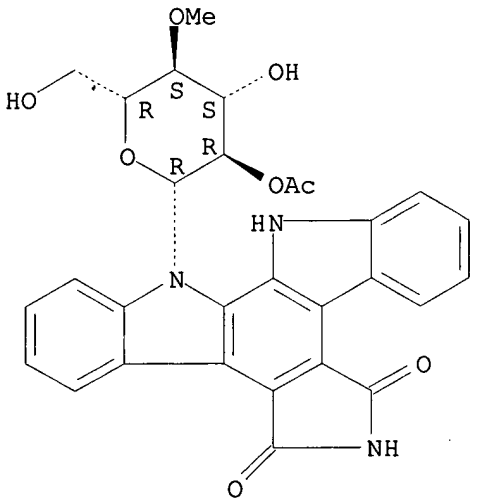
Absolute stereochemistry.



RN 220726-75-0 HCAPLUS

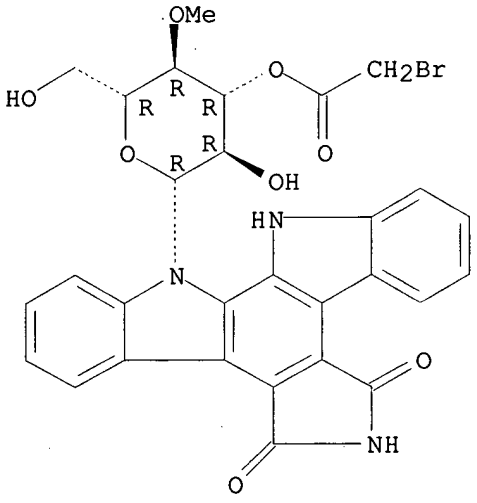
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12-(2-O-acetyl-4-O-methyl-.beta.-D-glucopyranosyl)-12,13-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



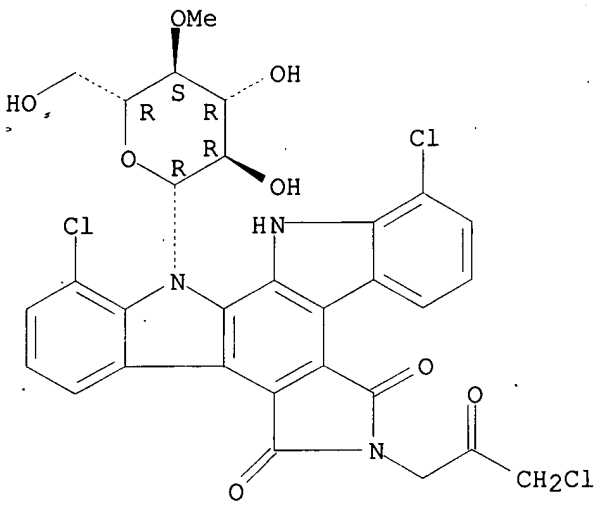
RN 220726-77-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12-[3-O-(bromoacetyl)-4-O-methyl-.beta.-D-glucopyranosyl]-12,13-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



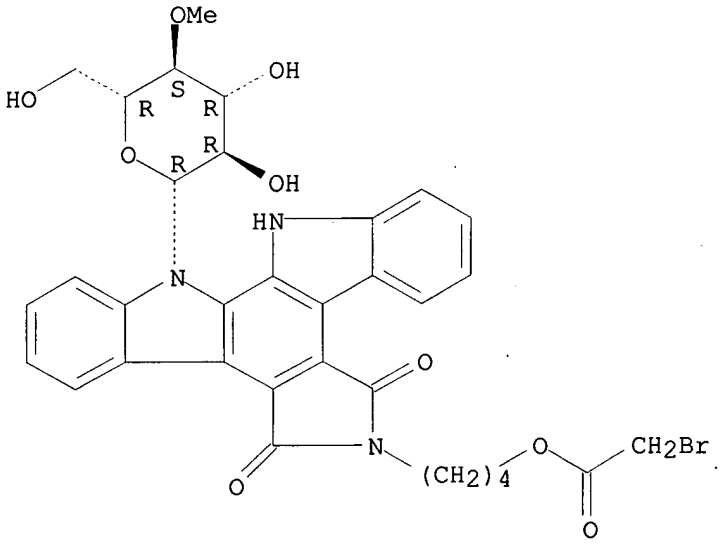
RN 220726-79-4 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-(3-chloro-2-oxopropyl)-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 220726-81-8 HCAPLUS
CN Acetic acid, bromo-, 4-[5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]butyl ester (9CI) (CA INDEX NAME)

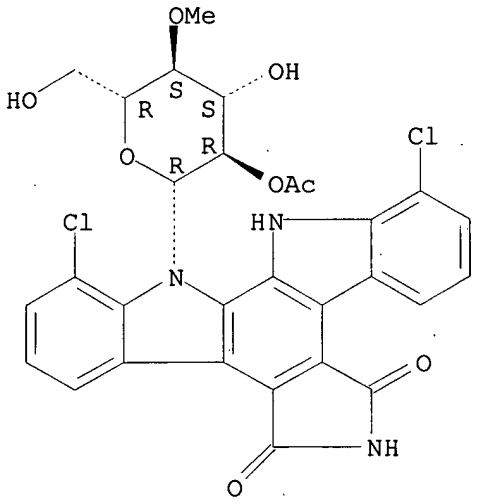
Absolute stereochemistry.



IT **220726-68-1P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(prepn., reaction, and biol. activity of in the prepn. of rebeccamycin analogs)
RN 220726-68-1 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione,

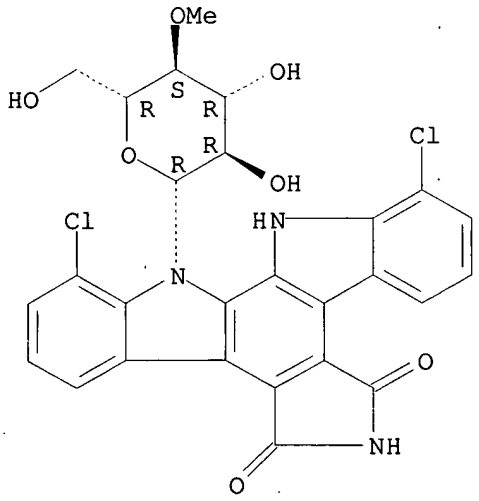
12-(2-O-acetyl-4-O-methyl-.beta.-D-glucopyranosyl)-1,11-dichloro-12,13-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **93908-02-2**, Rebeccamycin **205386-72-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of in the prepn. of rebeccamycin analogs)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

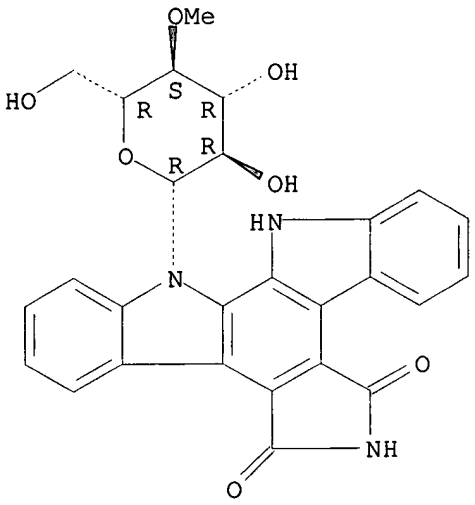
Absolute stereochemistry. Rotation (+).



RN 205386-72-7 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA

INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

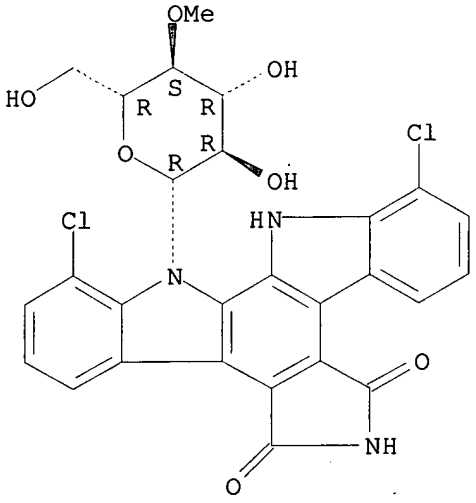
L7 ANSWER 16 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:660154 HCAPLUS
DOCUMENT NUMBER: 130:3993
TITLE: Synthesis, biochemical and biological evaluation of staurosporine analogs from the microbial metabolite rebeccamycin
AUTHOR(S): Anizon, Fabrice; Moreau, Pascale; Sancelme, Martine; Voldoire, Aline; Prudhomme, Michelle; Ollier, Monique; Severe, Daniele; Riou, Jean-Francois; Bailly, Christian; Fabbro, Doriano; Meyer, Thomas; Aubertin, A. M.
CORPORATE SOURCE: Electrosynthese et Etude de Systemes a Interet Biologique, UMR 6504, Universite Blaise Pascal, Synthese, Aubiere, 63177, Fr.
SOURCE: Bioorganic & Medicinal Chemistry (1998), 6(9), 1597-1604
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The indolo-carbazole antibiotics staurosporine and rebeccamycin are potent antitumor drugs targeting protein kinase C and topoisomerase I, resp. To obtain staurosporine analogs from rebeccamycin, different structural modifications were performed: coupling of the sugar moiety to the second indole nitrogen, dechlorination and then redn. of the imide function to amide. The newly synthesized compds. were tested for their abilities to bind to DNA and to inhibit topoisomerase I and protein kinase C. Their anti-proliferative effects in vitro against B16 melanoma and P388 leukemia (including the related P388CPT cell line resistant to camptothecin) as well as

their anti-HIV-1 and antimicrobial activities against various strains of microorganisms were detd. The cytotoxicity of a dechlorinated imide analog correlates well with its DNA binding and anti-topoisomerase I activities. These findings provide guidance for the development of new topoisomerase I-targeted antitumor indolo-carbazoles equipped with a carbohydrate attached to the two indole nitrogens.

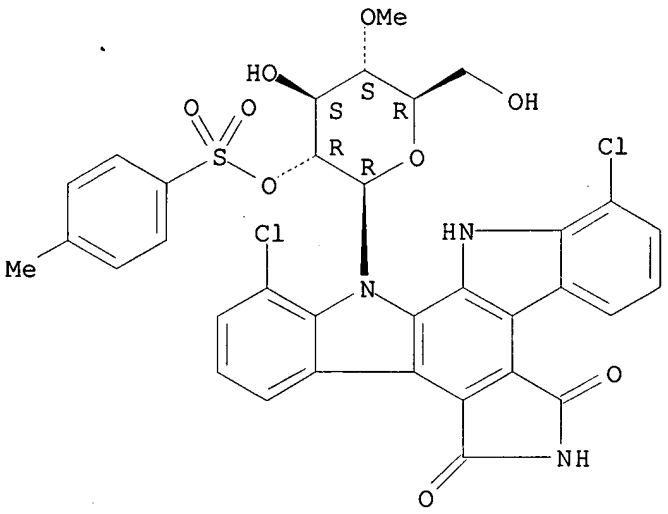
IT **93908-02-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and biochem. and biol. evaluation of staurosporine analogs from the microbial metabolite rebeccamycin)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



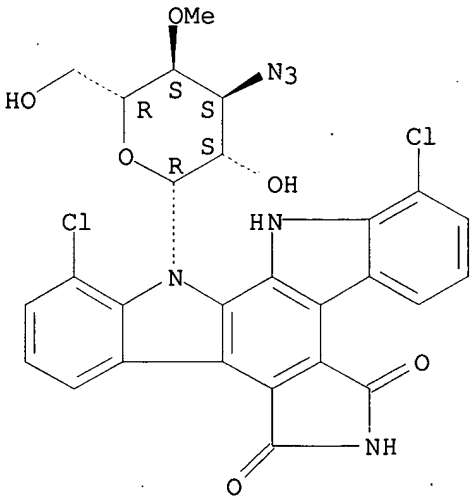
IT **215796-54-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and biochem. and biol. evaluation of staurosporine analogs from the microbial metabolite rebeccamycin)
RN 215796-54-6 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-[4-O-methyl-2-O-[(4-methylphenyl)sulfonyl]-.beta.-D-glucopyranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **215796-55-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and biochem. and biol. evaluation of staurosporine analogs from the microbial metabolite rebeccamycin)
RN 215796-55-7 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12-[3-azido-3-deoxy-4-O-methyl-.beta.-D-altropyranosyl]-1,11-dichloro-12,13-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

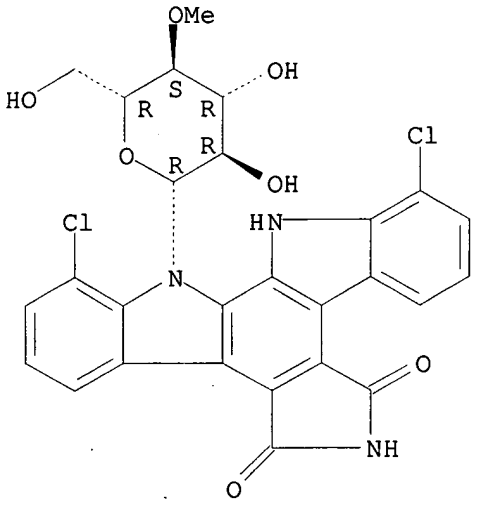


REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:269261 HCAPLUS

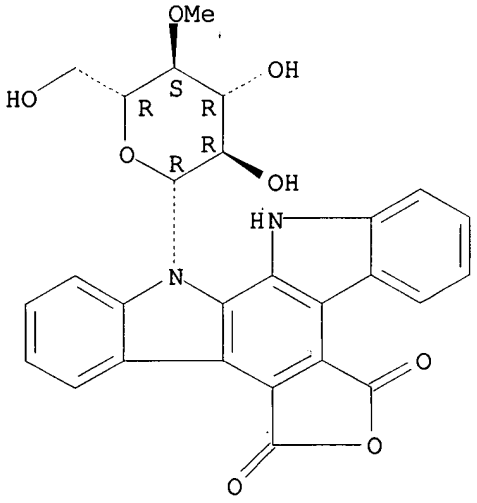
DOCUMENT NUMBER: 128:252578
TITLE: Syntheses and Biological Evaluation of Indolocarbazoles, Analogs of Rebeccamycin, Modified at the Imide Heterocycle
AUTHOR(S): Moreau, Pascale; Anizon, Fabrice; Sancelme, Martine; Prudhomme, Michelle; Bailly, Christian; Carrasco, Carolina; Ollier, Monique; Severe, Daniele; Riou, Jean-Francois; Fabbro, Doriano; Meyer, Thomas; Aubertin, Anne-Marie
CORPORATE SOURCE: Synthese et Etude de Systemes a Interet Biologique, Universite Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Journal of Medicinal Chemistry (1998), 41(10), 1631-1640
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A series of 10 indolocarbazole derivs., analogs to the antitumor antibiotic rebeccamycin, bearing modifications at the imide heterocycle were synthesized. They bear an N-Me imide, N-Me amide, or anhydride function instead of the original imide. Their inhibitory potencies toward topoisomerase I were examd. using a DNA relaxation assay and by analyzing the drug-induced cleavage of 32P-labeled DNA. Protein kinase C (PKC) inhibition and interaction with DNA were also studied together with the in vitro antiproliferative activities against B16 melanoma and P388 leukemia cells. The antimicrobial activities against two Gram-pos. bacteria (Bacillus cereus and Streptomyces chartreusis), a Gram-neg. bacterium (Escherichia coli), and a yeast (Candida albicans) were tested as well as their antiviral activities toward HIV-1. The efficiency of the anhydride compds. was compared to that of the parent compd. rebeccamycin and its dechlorinated analog. All the compds. studied were inactive against PKC. The structural requirements for PKC and topoisomerase I inhibition are markedly different. In sharp contrast with the structure-PKC inhibition relationships, the authors found that an anhydride function does not affect topoisomerase I inhibition, whereas a Me group on the indole nitrogen prevents the poisoning of topoisomerase I. The compds. exhibiting a marked toxicity to P388 leukemia cells had little or no effect on the growth of P333CPT5 cells which are resistant to the topoisomerase I inhibitor camptothecin. This study reinforces the conclusion that the DNA-topoisomerase I cleavable complex is the primary cellular target of the indolocarbazoles and significantly contributes to their cytotoxicity and possibly to their weak but noticeable anti-HIV-1 activities. The structure-activity relationships are also discussed.
IT **93908-02-2**, Rebeccamycin **156330-65-3**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(syntheses and biol. evaluation of indolocarbazoles, analogs of rebeccamycin, modified at imide heterocycle)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



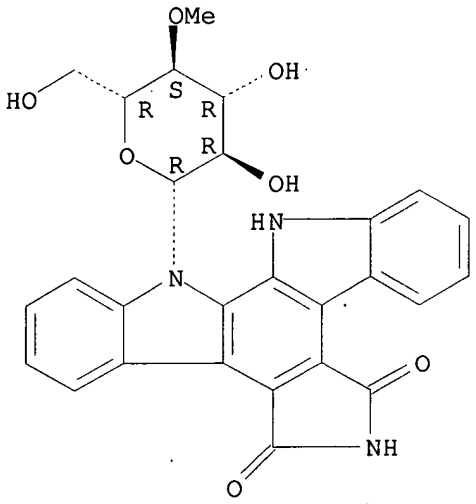
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



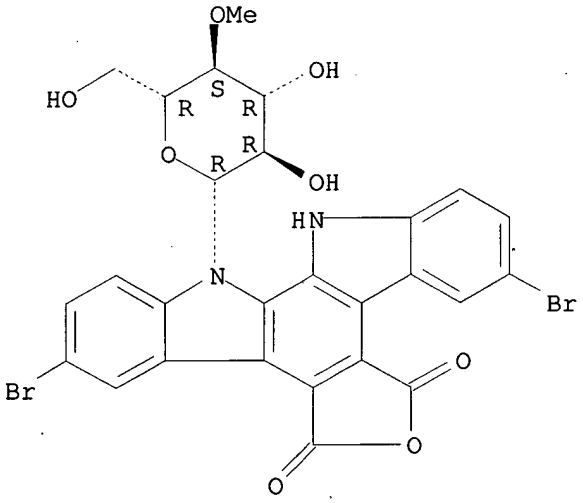
IT **205386-72-7P 205386-78-3P 205386-79-4P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(syntheses and biol. evaluation of indolocarbazoles, analogs of rebeccamycin, modified at imide heterocycle)
RN 205386-72-7 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



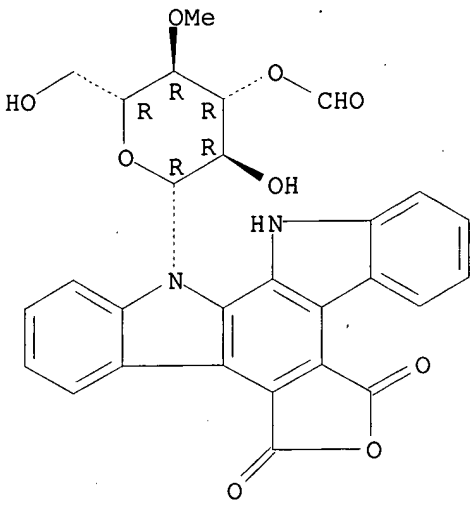
RN 205386-78-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 3,9-dibromo-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



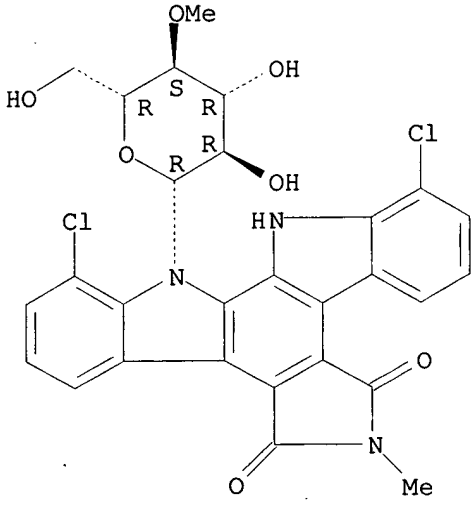
RN 205386-79-4 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12-(3-O-formyl-4-O-methyl-.beta.-D-glucopyranosyl)-12,13-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



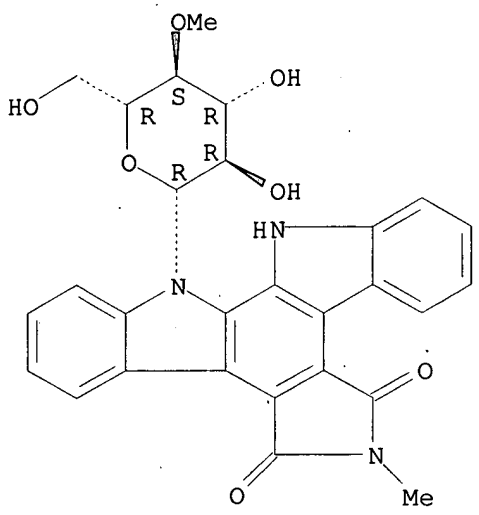
IT **196297-71-9 196297-72-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(syntheses and biol. evaluation of indolocarbazoles, analogs of rebeccamycin, modified at imide heterocycle)
RN 196297-71-9 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 196297-72-0 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 18 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:82145 HCAPLUS
DOCUMENT NUMBER: 128:212682
TITLE: Recognition of specific sequences in DNA by a topoisomerase I inhibitor derived from the antitumor drug rebeccamycin
AUTHOR(S): Bailly, Christian; Colson, Pierre; Houssier, Claude; Rodrigues-Pereira, Elisabete; Prudhomme, Michelle; Waring, Michael J.
CORPORATE SOURCE: Laboratoire Pharmacologie Moleculaire Antitumorale Centre Oscal Lambret, Institut National Sante Recherche Medicale Unite 124, Lille, 59045, Fr.
SOURCE: Molecular Pharmacology (1998), 53(1), 77-87
CODEN: MOPMA3; ISSN: 0026-895X
PUBLISHER: Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We investigated the interaction with DNA of two synthetic derivs. of the antitumor antibiotic rebeccamycin: R-3, which is a potent topoisomerase I inhibitor and contains a methoxyglucose moiety appended to the indolocarbazole chromophore, and its aglycon, R-4. Spectroscopic measurements indicate that R-3 intercalates into DNA and that its carbohydrate domain contributes significantly to reinforce the affinity for DNA. Two complementary ligation assays concur that R-3, but not its aglycon counterpart, exerts a significant effect on the curvature and/or the flexibility of DNA. The sugar moiety may be responsible for preferential binding of R-3 to circular (or bent) DNA mols. as opposed to linear DNA fragments. The sequence selectivity of binding to DNA has been studied thoroughly by footprinting with DNase I and two other nucleases. The glycosylated compd. is highly selective for nucleotide sequences contg. GpT (ApC) and TpG (CpA) steps. The deriv. lacking the sugar moiety on the indolocarbazole chromophore binds at essentially identical sites but with considerably lower affinity, so it seems that the chromophore rather than the carbohydrate is responsible for

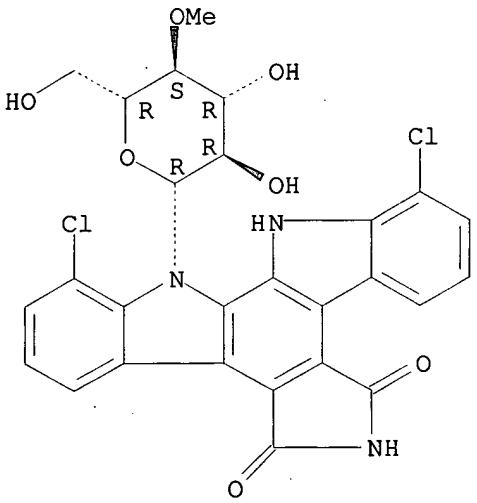
the preferential binding to sequences surrounding GpT and TpG steps. The influence of the exocyclic substituents present on the bases at the recognition sites (i.e., the 2-amino group of guanine and the 5-Me group of thymine) was evaluated using two series of modified DNA mols. prepd. by polymerase chain reaction contg. inosine and/or 2,6-diaminopurine and uridine and/or 5-methylcytosine residues. The introduction of the amino group onto purine residues or the addn. of a Me group to pyrimidine residues suffices to create new drug binding sites. Therefore, unlike most DNA-binding small mols., the rebeccamycin analog seems to be highly sensitive to any modification of the exocyclic substituents on the bases in both the major and minor grooves of the double helix. The footprinting profiles with the different DNA fragments bear a remarkable resemblance to those detd. for nogalamycin and bisnaphthalimide compds. known to recognize their preferred GpT and TpG sites via intercalation from the major groove. The unique DNA binding characteristics of the rebeccamycin analog correlate well with its inhibitory effects on topoisomerase I.

IT **93908-02-2**, Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(recognition of specific sequences in DNA by topoisomerase I inhibitors derived from antitumor drug rebeccamycin)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

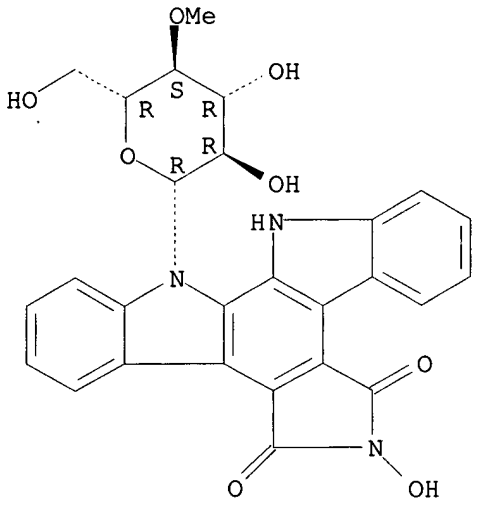


IT **183747-10-6**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(recognition of specific sequences in DNA by topoisomerase I inhibitors derived from antitumor drug rebeccamycin)

RN 183747-10-6 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

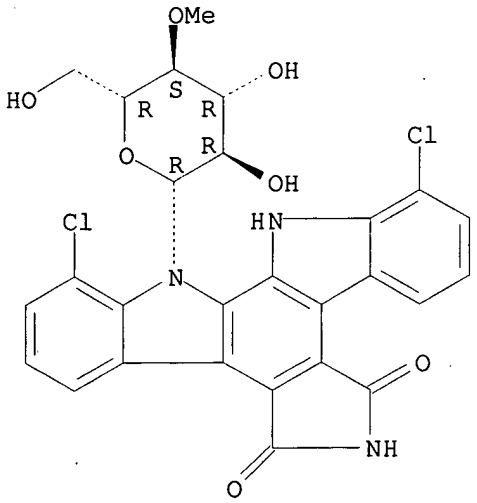
Absolute stereochemistry.



REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

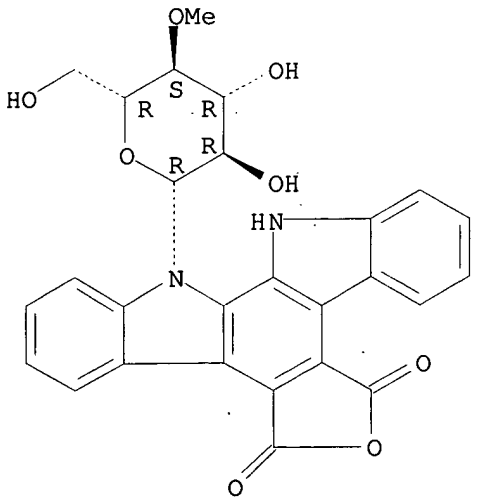
L7 ANSWER 19 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:759741 HCAPLUS
DOCUMENT NUMBER: 128:34931
TITLE: Indolocarbazole protein kinase C inhibitors from rebeccamycin. [Erratum to document cited in CA121:83780]
AUTHOR(S): Fabre, Serge; Prudhomme, Michelle; Sancelme, Martine; Rapp, Maryse
CORPORATE SOURCE: Lab. Chim. Org. Biol., Univ. Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Bioorganic & Medicinal Chemistry (1997), 5(11), 2109
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Structure 4 is cor.
IT **93908-02-2**, Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(hydrogenolysis, dechlorination, and protein kinase C inhibitory activity of (Erratum))
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **156330-65-3P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. and protein kinase C inhibitory activity of (Erratum))
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 20 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:631710 HCAPLUS
DOCUMENT NUMBER: 127:257129
TITLE: Syntheses and Biological Activities

Searcher : Shears 308-4994

(Topoisomerase Inhibition and Antitumor and Antimicrobial Properties) of Rebeccamycin Analogs Bearing Modified Sugar Moieties and Substituted on the Imide Nitrogen with a Methyl Group

AUTHOR(S): Anizon, Fabrice; Belin, Laure; Moreau, Pascale; Sancelme, Martine; Voldoire, Aline; Prudhomme, Michelle; Ollier, Monique; Severe, Daniele; Riou, Jean-Francois; Bailly, Christian; Fabbro, Doriano; Meyer, Thomas

CORPORATE SOURCE: Synthese Electrosynthese et Etude de Systemes a Interet Biologique, Universite Blaise Pascal, Aubiere, 63177, Fr.

SOURCE: Journal of Medicinal Chemistry (1997), 40(21), 3456-3465
CODEN: JMCMAR; ISSN: 0022-2623

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

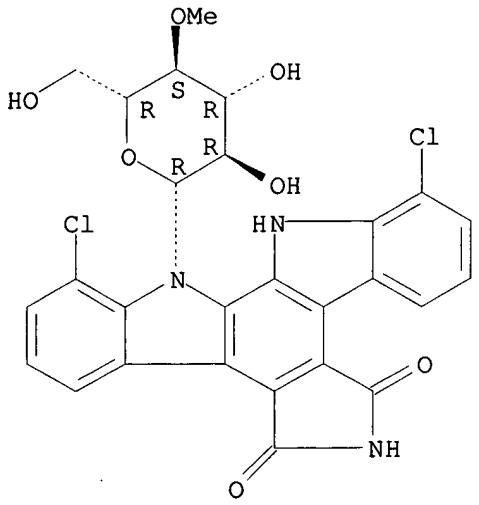
AB As a part of studies on structure-activity relationships, several potential topoisomerase I inhibitors were prepd. Different analogs of the antitumor antibiotic rebeccamycin substituted on the imide nitrogen with a Me group were synthesized. These compds. bore either the sugar residue of rebeccamycin, with or without the chlorine atoms on the indole moieties, or modified sugar residues (galactopyranosyl, glucopyranosyl, or fucopyranosyl) linked to the aglycon via a .beta.- or .alpha.-N-glycosidic bond. Their inhibitory properties toward protein kinase C, topoisomerase I, and topoisomerase II were examd., and their DNA-binding properties were investigated. Their in vitro antitumor activities against murine B16 melanoma and P388 leukemia cells were detd. Their antimicrobial activities were tested against Gram-pos. bacteria Bacillus cereus and Streptomyces chartreusis, Gram-neg. bacterium Escherichia coli, and yeast Candida albicans. These compds. are inactive toward topoisomerase II but inhibit topoisomerase I. A substitution with a Me group on the imide nitrogen led to a loss of protein kinase C inhibition in the maleimide indolocarbazole series but did not prevent topoisomerase I inhibition. Compds. possessing a .beta.-N-glycosidic bond, which fully intercalated into DNA, were more efficient at inhibiting topoisomerase I than their analogs with an .alpha.-N-glycosidic bond; however, both were equally toxic toward P388 leukemia cells. Dechlorinated rebeccamycin possessing a Me group on the imide nitrogen was about 10 times more efficient in terms of cytotoxicity and inhibition of topoisomerase I than the natural metabolite.

IT **93908-02-2**, Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(prepn. and biol. activities of rebeccamycin analogs)

RN 93908-02-2 HCAPLUS

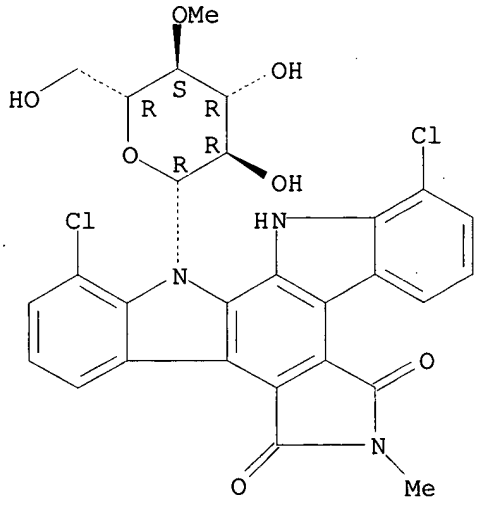
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



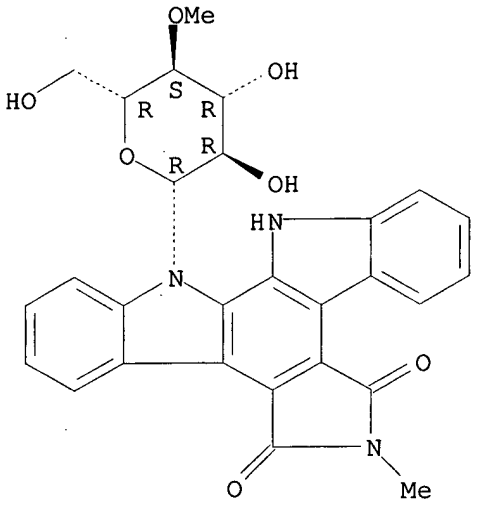
IT **196297-71-9P 196297-72-0P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and biol. activities of rebeccamycin analogs)
RN 196297-71-9 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



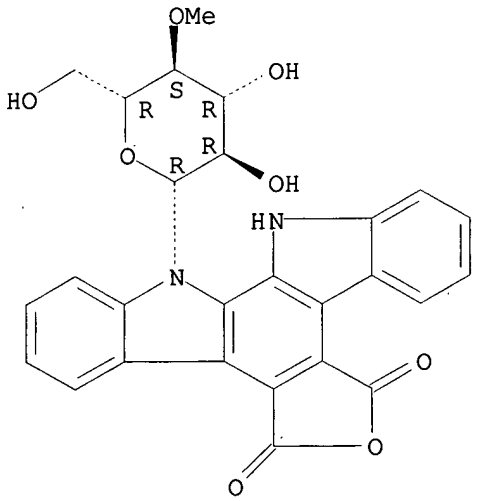
RN 196297-72-0 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-methyl-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **156330-65-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and biol. activities of rebeccamycin analogs)
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

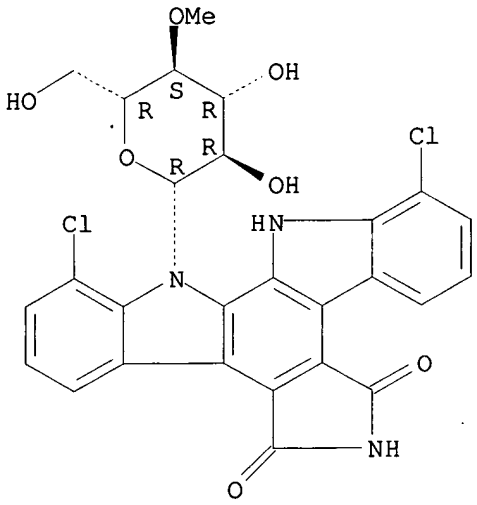


L7 ANSWER 21 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:175231 HCAPLUS
DOCUMENT NUMBER: 126:260709
TITLE: DNA Cleavage by Topoisomerase I in the Presence of Indolocarbazole Derivatives of Rebeccamycin
AUTHOR(S): Bailly, Christian; Riou, Jean-Francois; Colson,

Pierre; Houssier, Claude; Rodrigues-Pereira, Elisabete; Prudhomme, Michelle
CORPORATE SOURCE: INSERM U124 et Laboratoire de Pharmacologie Moleculaire Antitumorale du Centre Oscar Lambret, Institut de Recherches sur le Cancer, Lille, 59045, Fr.
SOURCE: Biochemistry (1997), 36(13), 3917-3929
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB DNA topoisomerase I has been shown to be an important therapeutic target in cancer chemotherapy for the camptothecins as well as for indolocarbazole antibiotics such as BE-13793C and its synthetic derivs. NB-506 and ED-110 [Yoshinari et al. (1993) Cancer Res. 53, 490-494]. To investigate the mechanism of topoisomerase I inhibition by indolocarbazoles, we have studied the induction of DNA cleavage by purified mammalian topoisomerase I mediated by the antitumor antibiotic rebeccamycin and a series of 20 indolocarbazole derivs. The compds. tested bear (i) various functional groups on the non-indolic moiety (X = CO, CH2, CHOH), (ii) a hydrogen or a chlorine atom at positions 1 and 11 (R2), and (iii) different substituents on the maleimido function (R1 = H, OH, NH2, NHCHO). Half of the ligands have the same carbohydrate moiety as rebeccamycin whereas the other ligands have no sugar residue. The inhibitory potency of the test compds. was assessed in vitro by comparing the cleavage of [32P]-labeled restriction fragments by the enzyme in the absence and presence of the drug. In addn., the DNA-binding properties of these compds. were investigated by means of complementary spectroscopic techniques including elec. linear dichroism, and the DNA sequence selectivity was probed by DNase I footprinting. The study shows that the sugar residue attached to the indolocarbazole chromophore is crit. for the drug ability to interfere with topoisomerase I as well as for the formation of intercalation complexes. Structure-activity relationships indicate that the presence of chlorine atoms significantly reduces the effects on topoisomerase I whereas the substituents on the maleimido function and the functional group on the non-indolic moiety can be varied without redn. of activity. The results suggest that the inhibition of topoisomerase I by indolocarbazoles arises in part from their ability to interact with DNA. Anal. of the base preferences around topoisomerase I cleavage sites in various restriction fragments indicated that, in a manner similar to camptothecin, the rebeccamycin analog R-3 stabilized topoisomerase I preferentially at sites having a T and a G on the 5' and 3' sides of the cleaved bond, resp. By analogy with models previously proposed for camptothecin and numerous topoisomerase II inhibitors which intercalate into DNA, a stacking model for the interaction between DNA, topoisomerase I and indolocarbazoles is proposed. These findings provide guidance for the development of new topoisomerase I-targeted antitumor indolocarbazole derivs.
IT **93908-02-2**, Rebeccamycin **151069-11-3** **151069-54-4** **156330-65-3** **183747-08-2** **183747-09-3** **183747-10-6** **183747-11-7**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(DNA cleavage by topoisomerase I in presence of indolocarbazole

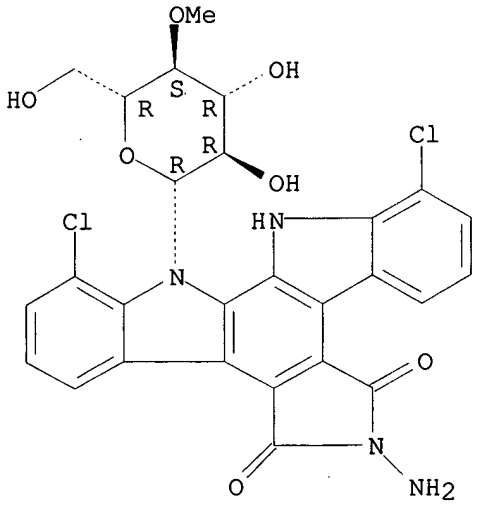
derivs. of rebeccamycin)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 151069-11-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

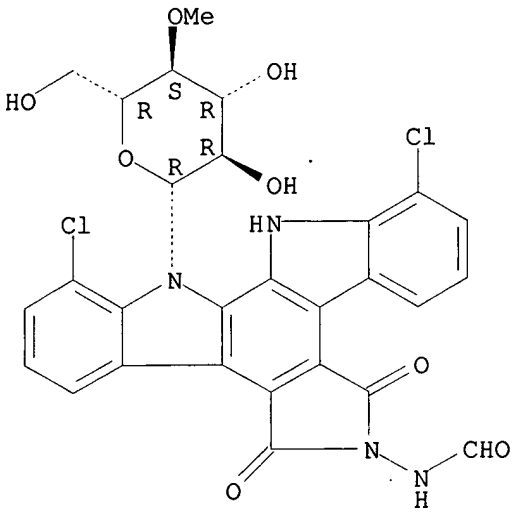
Absolute stereochemistry.



RN 151069-54-4 HCAPLUS
CN Formamide, N-[1,11-dichloro-5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-

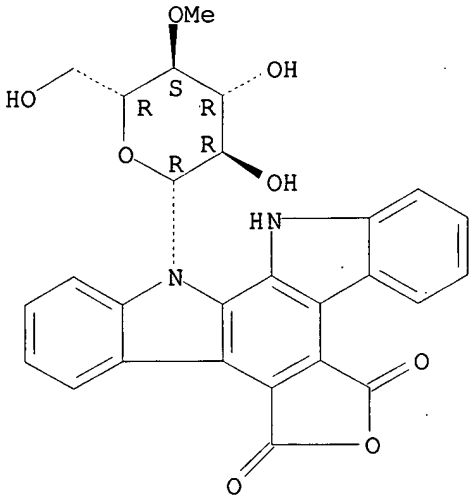
c]carbazol-6-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



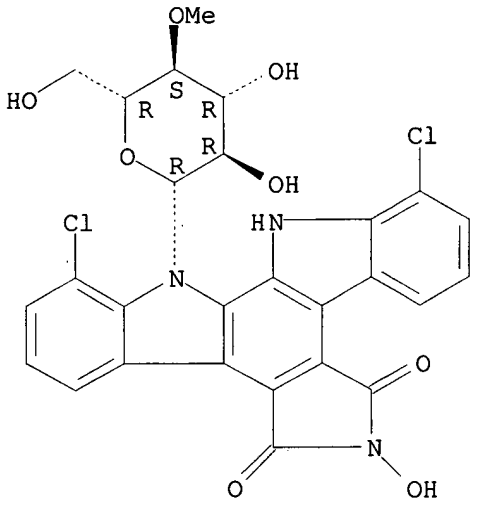
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



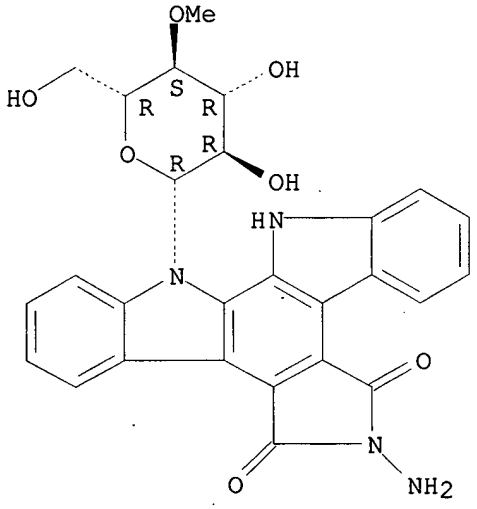
RN 183747-08-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



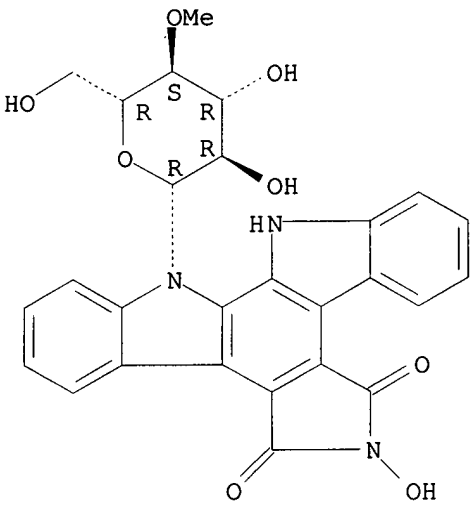
RN 183747-09-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



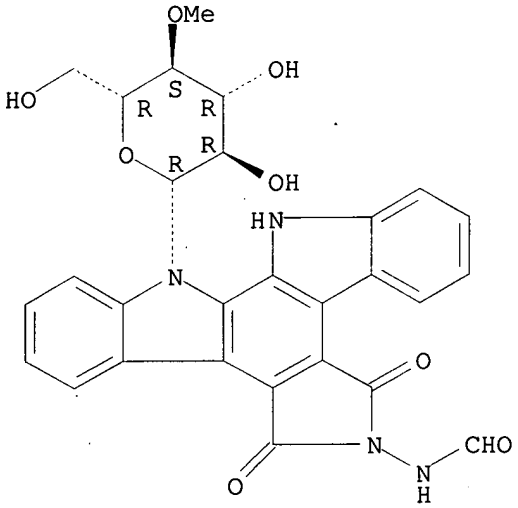
RN 183747-10-6 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 183747-11-7 HCAPLUS
CN Formamide, N-[5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 22 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:49293 HCAPLUS
DOCUMENT NUMBER: 126:157762
TITLE: Preparation of indolopyrrolocarbazole nucleoside analogs as antitumors
INVENTOR(S): Kojiri, Katsuhisa; Kondo, Hisao; Arakawa, Hiroharu; Ohkubo, Mitsuru; Suda, Hiroyuki
PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Japan
SOURCE: U.S., 40 pp., Cont.-in-part of U.S. Ser. No.

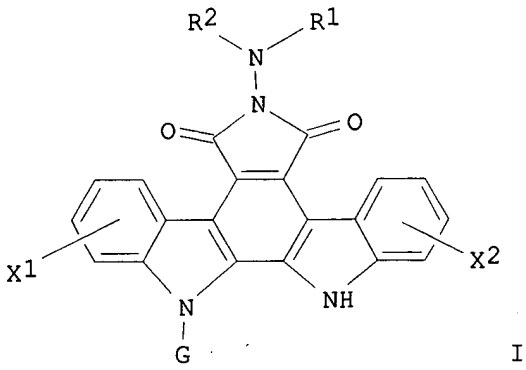
5,437,996.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5591842	A	19970107	US 1994-255980	19940608
PL 171468	B1	19970530	PL 1992-304729	19921127
PL 172316	B1	19970930	PL 1992-316368	19921127
PL 172609	B1	19971031	PL 1992-316369	19921127
RO 113469	B1	19980730	RO 1993-1067	19921127
CZ 287304	B6	20001011	CZ 1992-3508	19921127
CN 1073948	A	19930707	CN 1992-114888	19921128
CN 1030987	B	19960214		
ZA 9209263	A	19930525	ZA 1992-9263	19921209
CN 1075482	A	19930825	CN 1993-100326	19930102
CN 1035878	B	19970917		
US 5437996	A	19950801	US 1993-166364	19931214
US 5589365	A	19961231	US 1995-381286	19950131
WO 9530682	A1	19951116	WO 1995-JP868	19950502
W: AU, CA, CN, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5668271	A	19970916	US 1995-474659	19950607
US 5804564	A	19980908	US 1996-737382	19961108

PRIORITY APPLN. INFO.:

JP 1991-341916	A	19911129
JP 1992-69269	A	19920218
JP 1992-257306	A	19920901
US 1992-981070	A2	19921124
US 1993-68097	B2	19930528
US 1993-166364	A2	19931214
CS 1992-3508	A	19921127
WO 1992-JP1549	W	19921127
JP 1992-353623	A	19921214
JP 1993-53035	A	19930218
JP 1994-119483	A	19940509
JP 1994-145648	A	19940603
US 1994-255980	A2	19940608
WO 1995-JP868	W	19950502

OTHER SOURCE(S): MARPAT 126:157762
GI



I

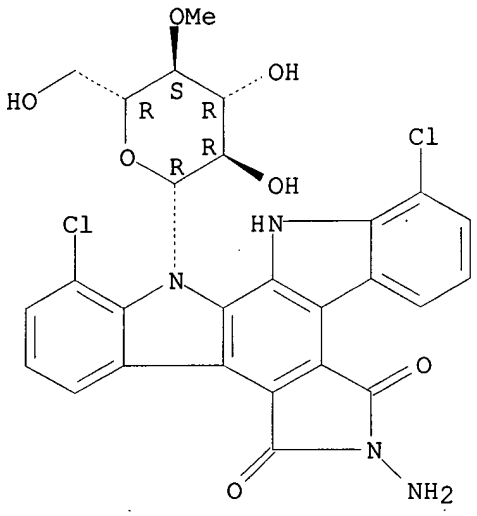
AB Indolopyrrocarbazole nucleoside analogs I (R1, R2 = H, alkyl, alkenyl, arom hydrocarbon, heterocycle; aminoalkyl; G = sugar; X1, X2 = H, halogen, NH2, alkoxy, alkylamino, OH) were prepd. and showed excellent antitumor activity as evidenced by in vitro proliferation inhibiting activity against mouse leukemia cell, human gastric cancer cell, human lung cancer cell and human colon cancer cell. Thus, I (R1 = H, R2 = CHO; G = .beta.-D-glucopyranosyl; X1 = X2 = OH) was prepd. and tested as antitumor (dosage of 0.3-100 mg/kg/day; MST = 16.8-52.4).

IT **151069-11-3P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of indolopyrrolocarbazole nucleoside analogs as antitumors)

RN 151069-11-3 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

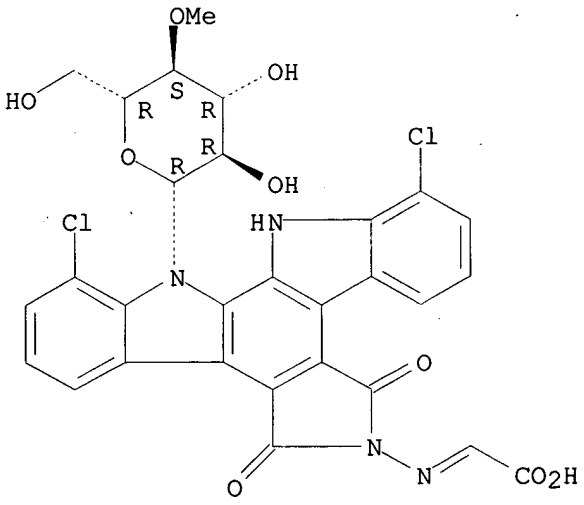
Absolute stereochemistry.



IT **151069-52-2P 151069-53-3P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of indolopyrrolocarbazole nucleoside analogs as antitumors)

RN 151069-52-2 HCAPLUS
CN Acetic acid, [[1,11-dichloro-5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]imino]- (9CI) (CA INDEX NAME)

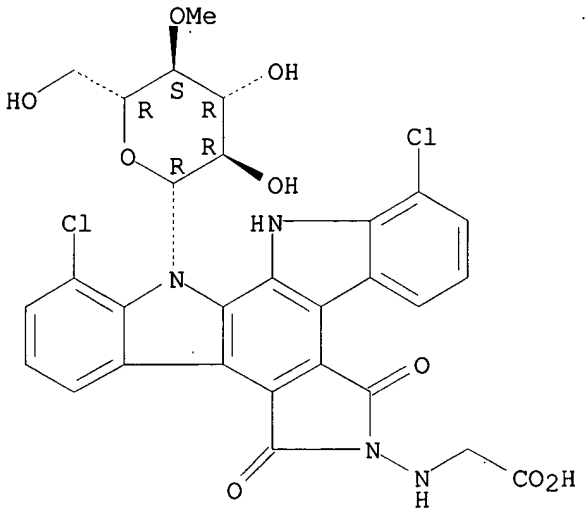
Absolute stereochemistry.
Double bond geometry unknown.



RN 151069-53-3 HCAPLUS
CN Glycine, N-[1,11-dichloro-5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-

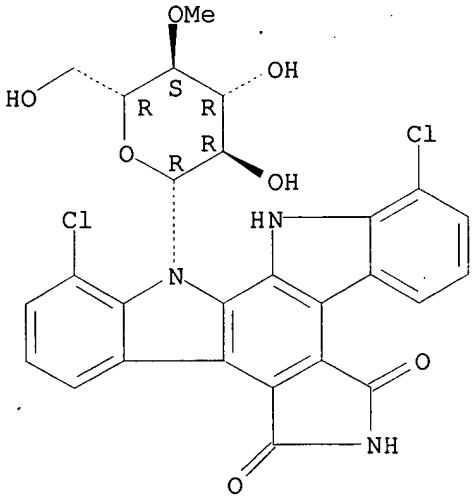
D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **93908-02-2**, Rebeccamycin
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of indolopyrrolocarbazole nucleoside analogs as antitumors)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



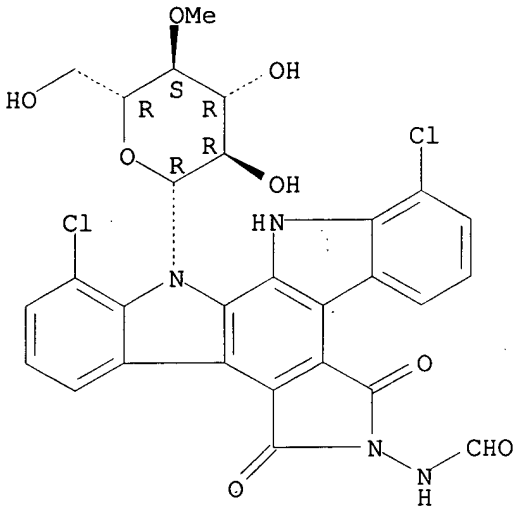
IT **151069-54-4P 151069-55-5P 186966-45-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of indolopyrrolocarbazole nucleoside analogs as antitumors)

RN 151069-54-4 HCAPLUS

CN Formamide, N-[1,11-dichloro-5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]- (9CI) (CA INDEX NAME)

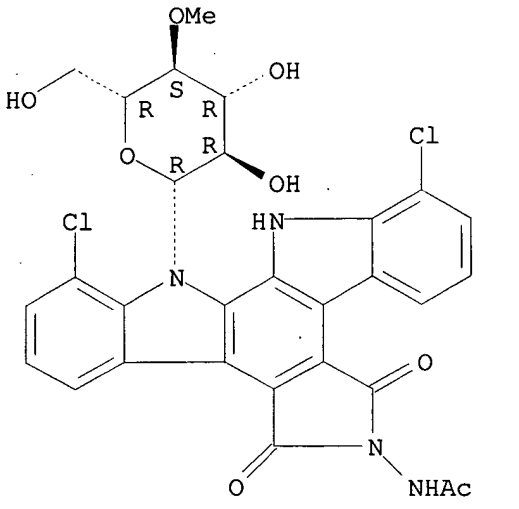
Absolute stereochemistry.



RN 151069-55-5 HCAPLUS

CN Acetamide, N-[1,11-dichloro-5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

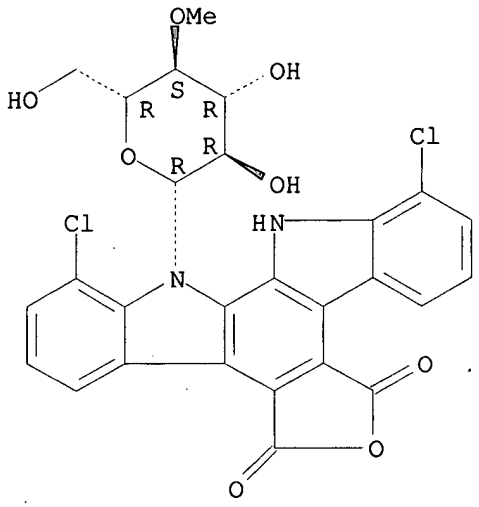


RN 186966-45-0 HCAPLUS

CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 1,11-dichloro-12,13-

dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



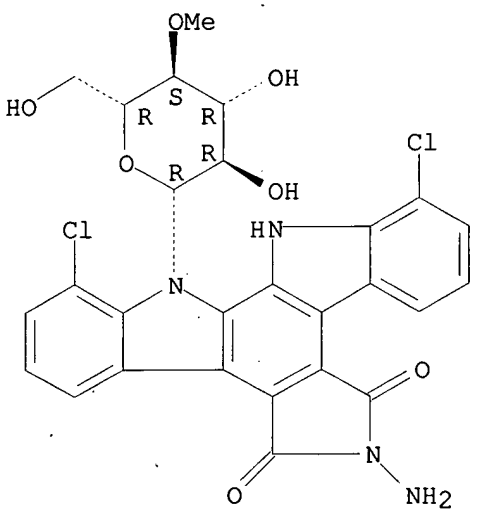
L7 ANSWER 23 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:618917 HCAPLUS
DOCUMENT NUMBER: 126:371
TITLE: Structure-Activity Relationships in a Series of Substituted Indolocarbazoles: Topoisomerase I and Protein Kinase C Inhibition and Antitumoral and Antimicrobial Properties
AUTHOR(S): Pereira, Elisabete Rodrigues; Belin, Laure; Sancelme, Martine; Prudhomme, Michelle; Ollier, Monique; Rapp, Maryse; Severe, Daniele; Riou, Jean-Francois; Fabbro, Doriano; Meyer, Thomas
CORPORATE SOURCE: Universite Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Journal of Medicinal Chemistry (1996), 39(22), 4471-4477
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A series of compds. structurally related to staurosporine, rebeccamycin, and corresponding aglycons was synthesized, and their activities toward protein kinase C and topoisomerases I and II were tested together with their in vitro antitumor efficiency against murine B16 melanoma and P388 leukemia cells. Their antimicrobial activities were also examd. against a Gram-neg. bacterium (Escherichia coli), a yeast (Candida albicans), and three Gram-pos. bacteria (Bacillus cereus, Streptomyces chartreusis, and Streptomyces griseus). To avoid side effects expected with protein kinase C inhibitors, we introduced substitution on the maleimide nitrogen and/or a sugar moiety linked to one of the indole nitrogens to obtain specific inhibitors of topoisomerase I with minimal activities on protein kinase C. As expected, these structures were inefficient on topoisomerase II, and some of them exhibited a strong

activity against topoisomerase I. Generally, dechlorinated compds. were found to be more active than chlorinated analogs against both purified topoisomerase I and protein kinase C. On the other hand, opposite results were obtained in the cell antiproliferative assays. These results suggest lack of cell membrane permeability in the absence of the chlorine residue or cleavage of carbon-chlorine bonds inside the cell.

IT **151069-11-3P 156330-65-3P 183747-09-3P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of and topoisomerase I and protein kinase C inhibition and antitumor and antimicrobial properties of indolocarbazoles)

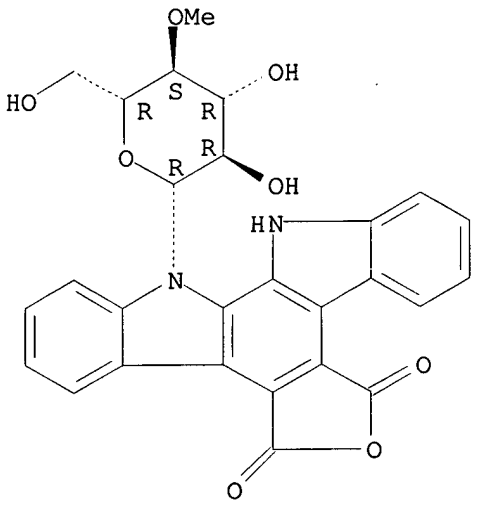
RN 151069-11-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



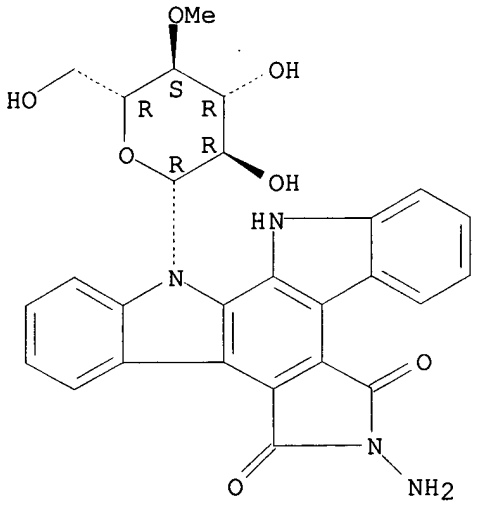
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 183747-09-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 6-amino-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

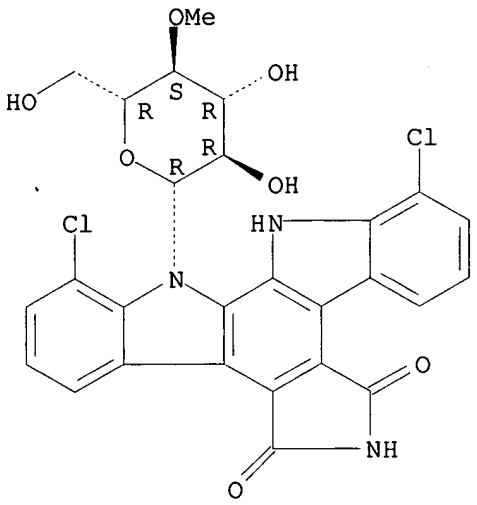
Absolute stereochemistry.



IT **93908-02-2**, Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(prepn. of and topoisomerase I and protein kinase C inhibition and antitumor and antimicrobial properties of indolocarbazoles)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-

(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

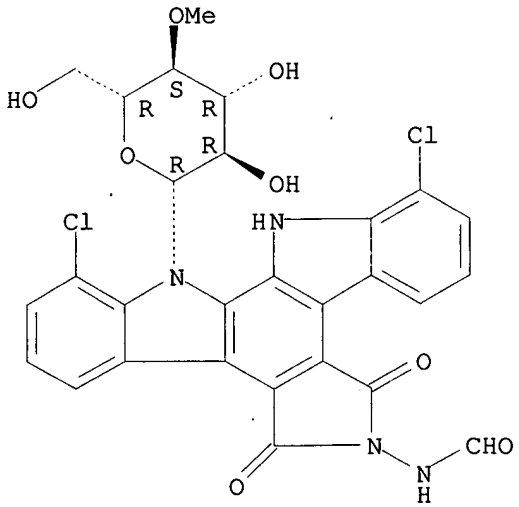


IT **151069-54-4P 183747-08-2P 183747-10-6P**
183747-11-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of and topoisomerase I and protein kinase C inhibition and antitumor and antimicrobial properties of indolocarbazoles)

RN 151069-54-4 HCAPLUS

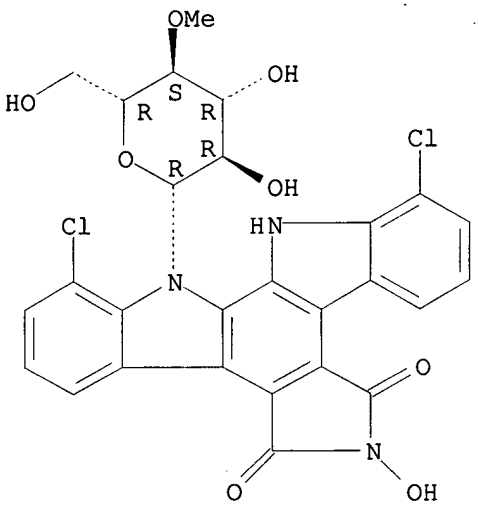
CN Formamide, N-[1,11-dichloro-5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-5,7-dioxo-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



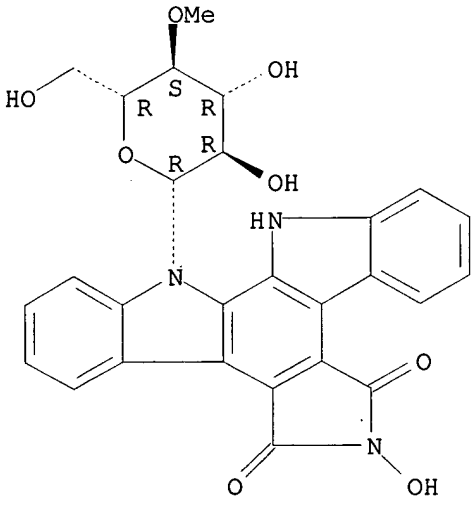
RN 183747-08-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 183747-10-6 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 12,13-dihydro-6-hydroxy-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

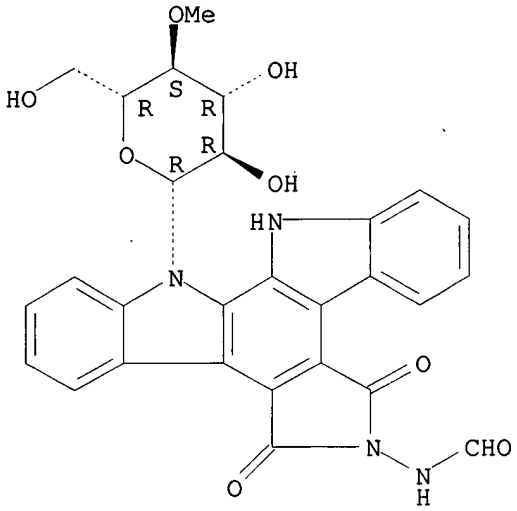
Absolute stereochemistry.



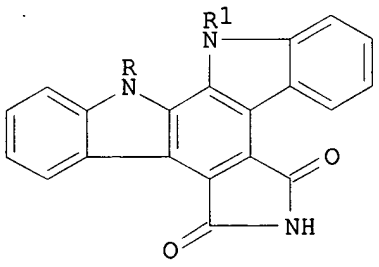
RN 183747-11-7 HCAPLUS
CN Formamide, N-[5,7,12,13-tetrahydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-6H-indolo[2,3-a]pyrrolo[3,4-c]carbazol-6-yl]- (9CI)

(CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 24 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:600916 HCAPLUS
DOCUMENT NUMBER: 125:301472
TITLE: Synthesis of nucleosides of bis(indolyl)maleimides and related indolo[2,3-.alpha.]carbazoles
AUTHOR(S): Plikhtyak, I. L.; Miniker, T. D.; Melnik, S. Ya.
CORPORATE SOURCE: Cancer Research Center, Moscow, 115478, Russia
SOURCE: Collection of Czechoslovak Chemical Communications (1996), 61(Spec. Issue), S148-S149
CODEN: CCCCAK; ISSN: 0010-0765
PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Rebeccamycin analogs I (R = .beta.-D-xylopyranosyl, .alpha.-L-arabinopyranosyl; R1 = H, Me) were prepd. from

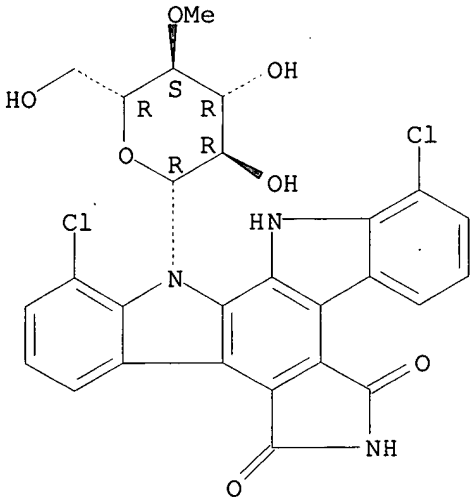
1-(2,3,4-tri-O-acetyl-.beta.-D-xylopyranosyl)-1H-indole or
1-(2,3,4-tri-O-acetyl-.alpha.-L-arabinopyranosyl)-1H-indole and
1H-indole-3-acetic acid.

IT **93908-02-2DP**, Rebeccamycin, analogs
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of .beta.-D-xylopyranosyl or .alpha.-L-arabinopyranosyl rebeccamycin analogs)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 25 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:885472 HCAPLUS

DOCUMENT NUMBER: 123:340517

TITLE: Synthesis of a rebeccamycin-related indolo[2,3-a]carbazole by palladium(0) catalyzed polyannulation

AUTHOR(S): Saulnier, Mark G.; Frennesson, David B.; Deshpande, Milind S.; Vyas, Dinesh M.

CORPORATE SOURCE: Bristol-Myers Squibb Co., Wallingford, CT, 06492, USA

SOURCE: Tetrahedron Letters (1995), 36(43), 7841-4
CODEN: TELEAY; ISSN: 0040-4039

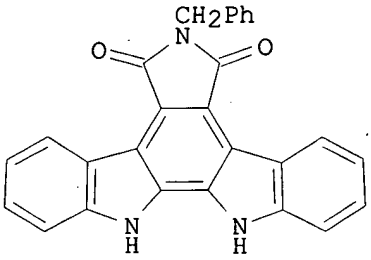
PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 123:340517

GI



I

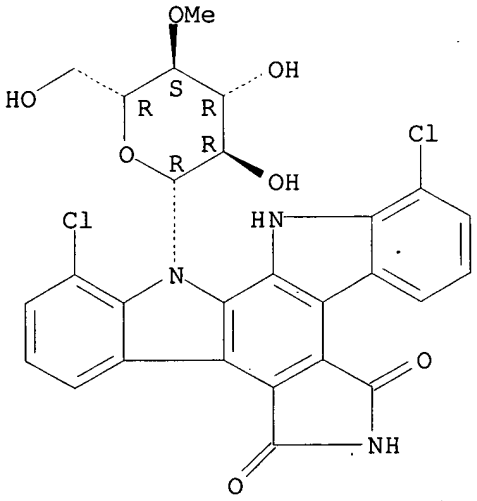
AB The assembly of the parent Indolo[2,3-a]carbazole ring system I, common to rebeccamycin and arcyriaflavin A, is efficiently accomplished by the discovery of a novel palladium(0)-catalyzed polyannulation reaction, wherein 4 bonds are formed in a single step from a simple monocyclic 1,3-diacetylene precursor, 2-CF3CONHC6H4C.tplbond.CC.tplbond.CC6H4NHCOCF3-2. This chem. further demonstrates the power of palladium(0) in the execution of complex synthetic org. chem., and also provides a novel approach to the synthesis of indolo[2,3-a]carbazole alkaloids, an increasingly important class of bioactive natural products.

IT **93908-02-2P**, Rebeccamycin
RL: PNU (Preparation, unclassified); PREP (Preparation)
(synthesis of a rebeccamycin-related indolo[2,3-a]carbazole by palladium(0) catalyzed polyannulation)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 26 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:330129 HCAPLUS
DOCUMENT NUMBER: 122:230269

TITLE: Fluorescence polarization studies of the binding of BMS 181176 to DNA

AUTHOR(S): Krishnan, Bala S.; Moore, Michelle E.; Lavoie, Crystal P.; Long, Byron H.; Dalterio, Richard A.; Wong, Henry S.; Rosenberg, Ira E.

CORPORATE SOURCE: Analytical Res. Development, Wallingford, CT, 06492, USA

SOURCE: Journal of Biomolecular Structure & Dynamics (1994), 12(3), 625-36
CODEN: JBSDD6; ISSN: 0739-1102

PUBLISHER: Adenine Press

DOCUMENT TYPE: Journal

LANGUAGE: English

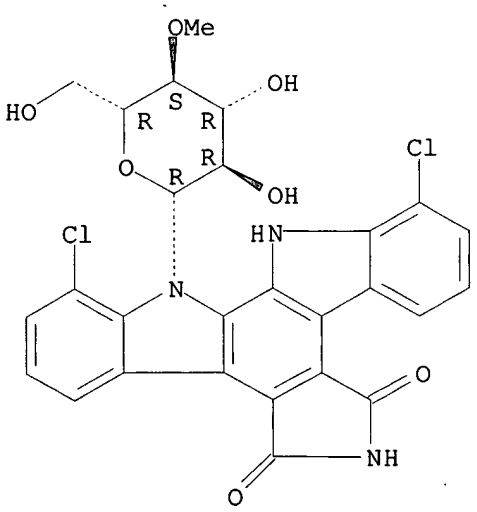
AB The DNA binding of BMS 181176, an antitumor antibiotic deriv. of rebeccamycin was characterized by DNA unwinding assays, as well as by fluorescence emission and polarization spectroscopic techniques. Unwinding and rewinding of supercoiled DNA was interpreted in terms of intercalation of BMS 181176 into DNA. BMS 181176 shows an enhanced fluorescence emission upon binding to the AT sequence and no enhancement upon binding fluorescence emission upon binding to the AT sequence and no enhancement upon binding to the GC sequence. BMS 181176 appears to be a weaker binder to poly(dAdT).poly(dAdT) compared to doxorubicin and ethidium bromide. When bound to DNA, the rotational motion of BMS 181176 is substantially decreased as evident from the increase in fluorescence polarization. BMS 181176 exhibits a range of binding strengths depending on the DNA. This is demonstrated by the Acridine Orange displacement assay using fluorescence polarization.

IT **93908-02-2**, Rebeccamycin
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorescence polarization studies of binding of BMS 181176 to DNA)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

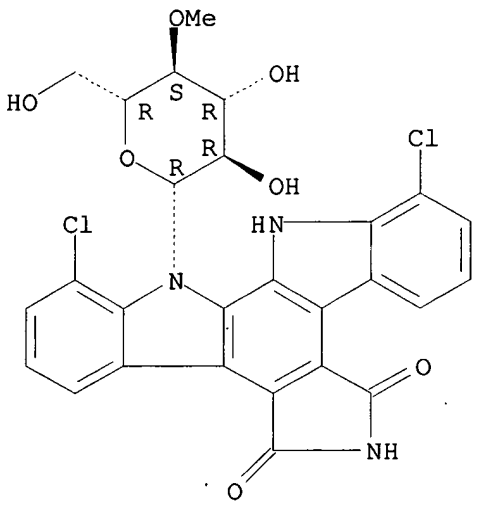


L7 ANSWER 27 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:209912 HCAPLUS
DOCUMENT NUMBER: 122:45874
TITLE: K252a, KT5720, KT5926, and U98017 support paclitaxel (taxol)-dependent cells and synergize with paclitaxel
AUTHOR(S): Abraham, Irene; Wolf, Cindy L.; Sampson, Kathleen E.; Laborde, Alice L.; Shelly, John A.; Aristoff, Paul A.; Skulnick, Harvey I.
CORPORATE SOURCE: Cell. Biol., Upjohn Co., Kalamazoo, MI, 49007, USA
SOURCE: Cancer Research (1994), 54(22), 5889-94
CODEN: CNREA8; ISSN: 0008-5472
PUBLISHER: American Association for Cancer Research
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have used paclitaxel-dependent Tax 2-4 cells to screen for compds. that have paclitaxel-like functional activity. The indolocarbazole serine/threonine kinase inhibitor K252a and analogs such as KT5926, KT5720, and K252b partially support the growth of the paclitaxel-dependent cells in the absence of paclitaxel. A novel kinase inhibitor of similar structure, U98017, supports the growth of the dependent cells to 48% of that seen with paclitaxel. Used in combination with paclitaxel, these compds. reduce the amt. of paclitaxel required for max. growth of the dependent cells. Isobologram anal. demonstrates that these compds. also acvt synergistically with paclitaxel to promote toxicity in wild-type Chinese hamster ovary cells. These selected indolocarbazoles may act at sites distinct from that of paclitaxel and may specifically inhibit kinases that contribute to the destabilization of microtubules. Other indolocarbazoles such as staurosporine and rebeccamycin do not support paclitaxel-dependent cell growth. Structurally unrelated serine/threonine kinase inhibitors such as H-9 and H-7 or tyrosine kinase inhibitors such as lavendustin do not support the growth of these cells. These results define a screen for functional paclitaxel analogs and suggest that it may be useful to investigate the possible synergy of selected indolocarbazoles and paclitaxel in vivo.

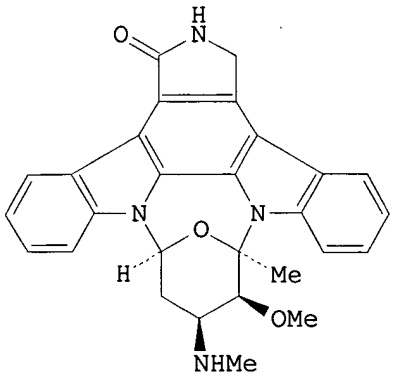
IT **93908-02-2**, Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(indolocarbazoles and analogs support taxol-dependent cells and synergize with taxol)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 28 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:35271 HCAPLUS
DOCUMENT NUMBER: 122:5286
TITLE: Antimicrobial activities of indolocarbazole and bis-indole protein kinase C inhibitors
AUTHOR(S): Sancelme, Martine; Fabre, Serge; Prudhomme, Michelle
CORPORATE SOURCE: Laboratoire Chimie Organique Biologique, Universite Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Journal of Antibiotics (1994), 47(7), 792-8
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



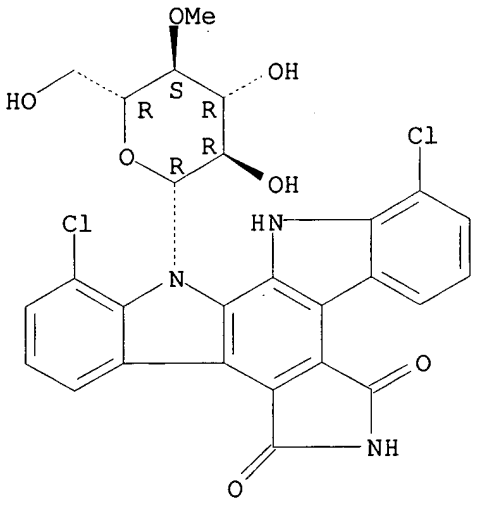
I

AB The antimicrobial activities of twenty-two substances structurally related to staurosporine (I), aglycon in the indolocarbazole and bis-indole series were examd. against Streptomyces chartreusis and Streptomyces griseus, Bacillus cerus, Escherichia coli, Candida

albicans and Botrytis cinerea. Inhibition of sporulation was examd. also on the two Streptomyces species. Unlike literature reports for efficient protein kinase inhibitors, staurosporine and K-252a, no evident correlation could be found either between protein kinase inhibitory potencies and inhibition of sporulation of the Streptomyces species or protein kinase between inhibitory potencies and growth of all microorganisms tested. A weak activity against C. albicans was obsd. for the chloro-indolocarbazole compds. as already reported for structurally related substances from the cyanobacterium Tolypothrix tjipanasensis.

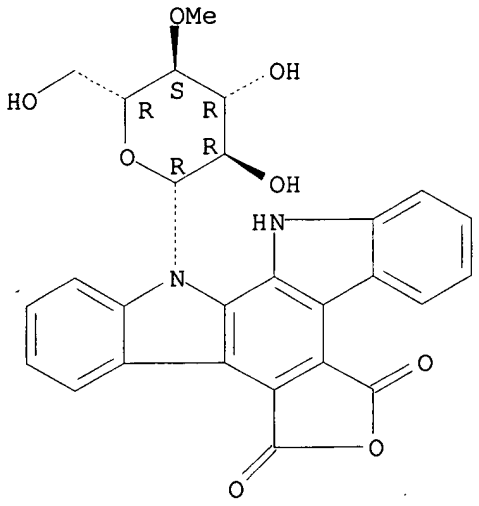
IT **93908-02-2**, Rebeccamycin
RL: BIOL (Biological study)
(antimicrobial activity of and protein kinase C insensitivity to)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

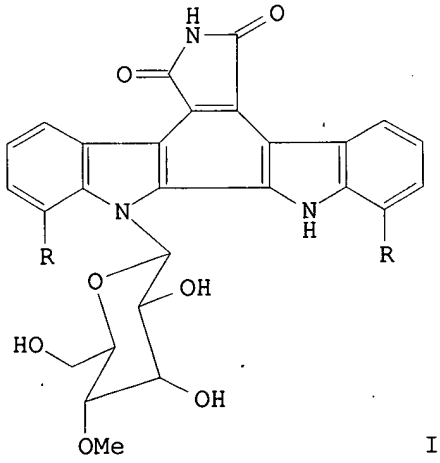


IT **156330-65-3**
RL: BIOL (Biological study)
(antimicrobial activity testing and protein kinase C insensitivity to)
RN 156330-65-3 HCAPLUS
CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

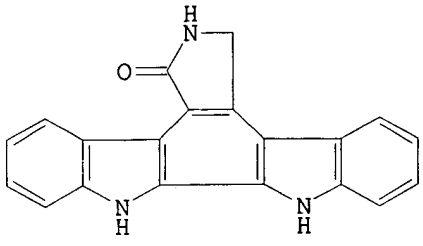
Absolute stereochemistry.



L7 ANSWER 29 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:483780 HCAPLUS
DOCUMENT NUMBER: 121:83780
TITLE: Indolocarbazole protein kinase C inhibitors from rebeccamycin
AUTHOR(S): Fabre, Serge; Prudhommen, Michelle; Sancelme, Martine; Rapp, Maryse
CORPORATE SOURCE: Lab. Chim. Org. Biol., Univ. Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Bioorganic & Medicinal Chemistry (1994), 2(2), 73-7
CODEN: BMECEP; ISSN: 0968-0896
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I



II

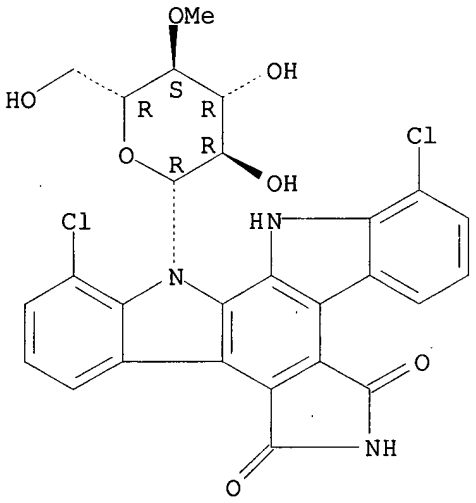
AB Structural modifications were carried out on rebeccamycin (I, R = Cl), and antitumor antibiotic, to obtain analogs, e.g., I (R = H). The inhibitory potencies of these analogs against protein kinase C are compared. The method described represents an alternative route to the staurosporin aglycon II, a potent protein kinase C inhibitor.

IT **93908-02-2**, Rebeccamycin
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogenolysis, dechlorination, and protein kinase C inhibitory activity of)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

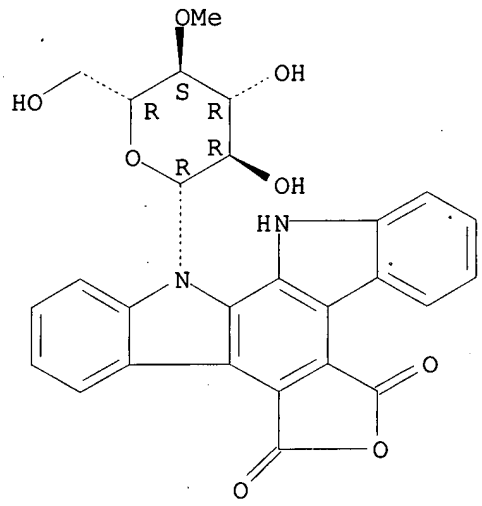


IT **156330-65-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and protein kinase C inhibitory activity of)

RN 156330-65-3 HCAPLUS

CN Furo[3,4-c]indolo[2,3-a]carbazole-5,7-dione, 12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

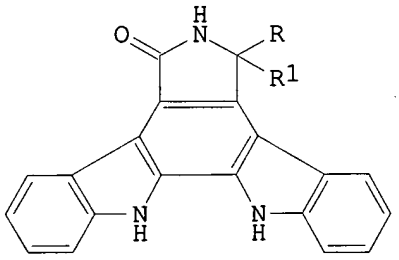
Absolute stereochemistry.



L7 ANSWER 30 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:	1993:538950 HCAPLUS
DOCUMENT NUMBER:	119:138950
TITLE:	Preparation of synthons for the synthesis of protein kinase C inhibitors from rebeccamycin
AUTHOR(S):	Fabre, Serge; Prudhomme, Michelle
CORPORATE SOURCE:	Lab. Chim. Org. Biol., Univ. Blaise Pascal, Aubiere, 63177, Fr.
SOURCE:	Bioorganic & Medicinal Chemistry Letters (1992), 2(5), 449-52 CODEN: BMCLE8; ISSN: 0960-894X
DOCUMENT TYPE:	Journal
LANGUAGE:	English
OTHER SOURCE(S):	CASREACT 119:138950

GI



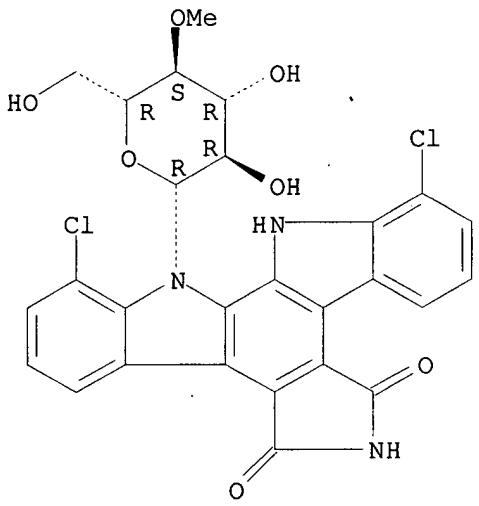
I

AB Aglycons I (RR1 = O; R = OH, H, R1 = H), useful for the prepn. of protein kinase C inhibitors, were prepd. from rebeccamycin, an antitumor antibiotic isolated from Saccharomyces aerocolonigenes, by deglycosidation with aq. HClO4, reductive dechlorination with Pd-HCO2H, and redn. I (R, R1 = H) had a protein kinase C-inhibiting IC50 of 2.45 .mu.M.

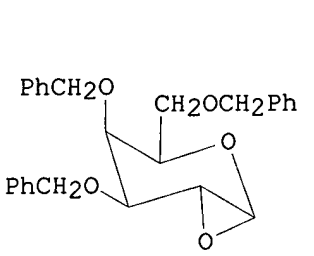
IT **93908-02-2**, Rebeccamycin

RL: RCT (Reactant); RACT (Reactant or reagent)
(conversion to synthons for protein kinase inhibitors)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

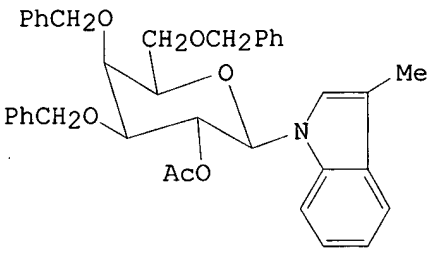
Absolute stereochemistry. Rotation (+).



L7 ANSWER 31 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1993:102385 HCAPLUS
DOCUMENT NUMBER: 118:102385
TITLE: A stereoselective synthesis of indole-.beta.-N-glycosides: an application to the synthesis of rebeccamycin
AUTHOR(S): Gallant, Michel; Link, James T.; Danishefsky, Samuel J.
CORPORATE SOURCE: Dep. Chem., Yale Univ., New Haven, CT, 06511-8118, USA
SOURCE: Journal of Organic Chemistry (1993), 58(2), 343-9
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 118:102385
GI



I



II

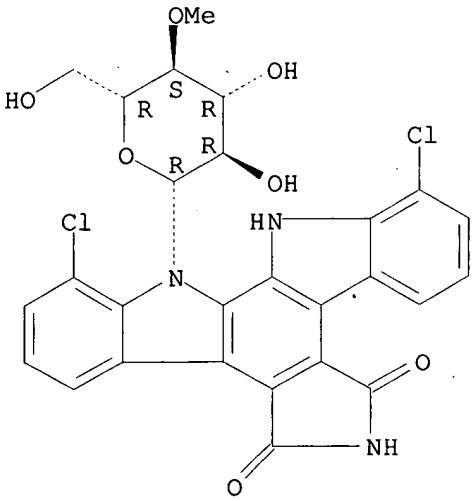
AB Sodium salts of indoles, e.g., skatole, have been found to open .alpha.-1,2-anhydrosugars, such as I, with inversion yielding indole .beta.-N-glycosides, such as II. This methodol. constitutes a concise route from glycals to the biol. active indole N-glycosides. An application to the total synthesis of rebeccamycin is described.

IT **93908-02-2P**, Rebeccamycin
RL: SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 32 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:32620 HCAPLUS

DOCUMENT NUMBER: 118:32620

TITLE: Induction of mammalian DNA topoisomerase I mediated DNA cleavage by antitumor indolocarbazole derivatives

AUTHOR(S): Yamashita, Yoshinori; Fujii, Noboru; Murakata, Chikara; Ashizawa, Tadashi; Okabe, Masami; Nakano, Hirofumi

CORPORATE SOURCE: Tokyo Res. Lab., Kyowa Hakko Kogyo Co., Ltd., Machida, 194, Japan
SOURCE: Biochemistry (1992), 31(48), 12069-75
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

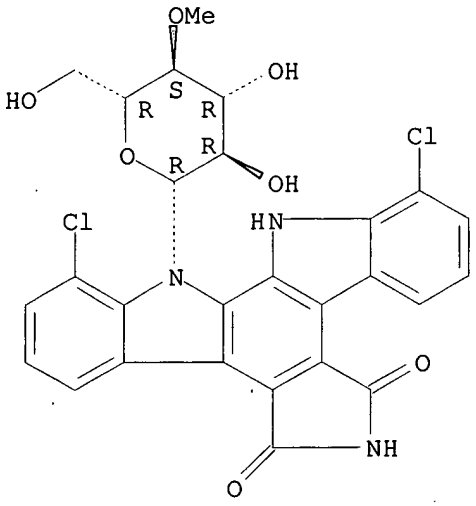
AB DNA topoisomerases are important drugs in cancer chemotherapy. KT6006 and KT6528, synthetic antitumor derivs. of the indolocarbazole antibiotic K252a, were potent inducers of a cleavable complex with topoisomerase I. In DNA cleavage assay using purified calf thymus DNA topoisomerase I and supercoiled pBR322 DNA, KT6006 induced topoisomerase I-mediated DNA cleavage in a dose-dependent manner at drug concns. up to 50 .mu.M, while DNA cleavage induced by KT6528 was satd. at 5 .mu.M. The maximal amt. of nicked DNA produced by KT6006 was >50% of substrate DNA, which was comparable to that with camptothecin. Heat treatment (65.degree.) of the reaction mixt. contg. these compds. and topoisomerase I resulted in a substantial redn. in DNA cleavage, suggesting that topoisomerase I mediated DNA cleavage induced by KT6006 and KT6528 is through the mechanism of stabilizing the reversible enzyme-DNA "cleavable complex". Neither KT6006 (I) nor KT6528 (II) induced topoisomerase II mediated DNA cleavage in vitro. KT6006 and KT6528 induced nearly identical topoisomerase I mediated DNA cleavage patterns, which were distinctly different from that with camptothecin. In contrast to the similarity between KT6006 and KT6528 in their structures and the nature of their cleavable complex with topoisomerase I, these drugs have different properties with respect to their interaction with DNA: KT6006 is a very weak intercalator, whereas KT6528 is a strong intercalator with potentials comparable to that of adriamycin. These results indicate that KT6006 and KT6528 represent a new distinct class of mammalian DNA topoisomerase I-active antitumor drugs.

IT **93908-02-2**, Rebeccamycin
RL: BIOL (Biological study)
(DNA topoisomerase I-mediated DNA cleavage response to, neoplasm inhibition in relation to)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



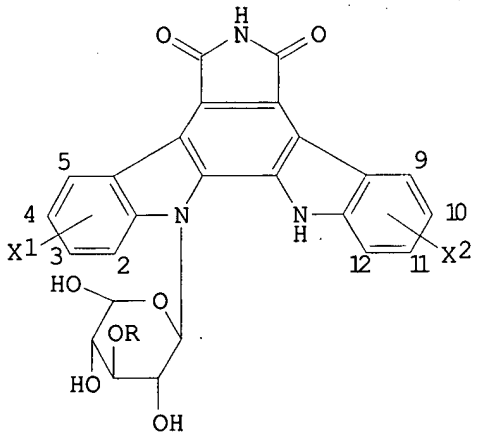
L7 ANSWER 33 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:82217 HCAPLUS
DOCUMENT NUMBER: 116:82217
TITLE: Biosynthesis of rebeccamycin analogs by tryptophan analogs feeding
INVENTOR(S): Lam, Kin Sing; Schroeder, Daniel R.; Mattei, Jacqueline; Forenza, Salvatore; Matson, James A.
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co., USA
SOURCE: Eur. Pat. Appl., 39 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 450327	A1	19911009	EP 1991-103316	19910305
EP 450327	B1	19960605		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
IL 97233	A1	19950330	IL 1991-97233	19910214
FI 9101047	A	19910907	FI 1991-1047	19910301
CA 2037783	AA	19910907	CA 1991-2037783	19910305
CA 2037783	C	19951017		
NO 9100855	A	19910909	NO 1991-855	19910305
NO 179555	B	19960722		
NO 179555	C	19961030		
AU 9172616	A1	19910912	AU 1991-72616	19910305
AU 623050	B2	19920430		
ZA 9101613	A	19911127	ZA 1991-1613	19910305
HU 61601	A2	19930128	HU 1991-716	19910305
HU 211055	B	19951030		
JP 07089981	A2	19950404	JP 1991-38752	19910305
JP 07080899	B4	19950830		
AT 138926	E	19960615	AT 1991-103316	19910305
ES 2088439	T3	19960816	ES 1991-103316	19910305

CZ 279307	B6	19950412	CZ 1991-586	19910306
SK 278338	B6	19961204	SK 1991-586	19910306
US 5468849	A	19951121	US 1994-216075	19940321
PRIORITY APPLN. INFO.:			US 1990-489430	19900306
			US 1991-648751	19910205
			US 1993-60951	19930513

OTHER SOURCE(S): MARPAT 116:82217

GI



I

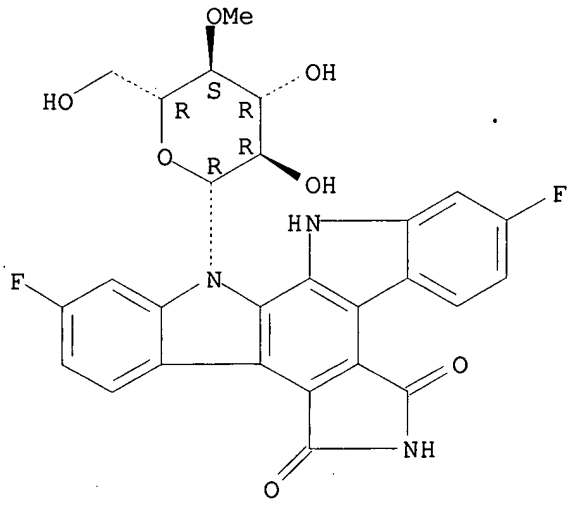
AB Rebeccamycin analogs (I; X1, X2 = H, F; provided that both X1, X2 .noteq. H; R = H, Me) are manufd. by cultivating a rebeccamycin-producing strain of Saccharothrix aerocolonigenes ATCC 39243 in an aq. nutrient medium in the presence of a tryptophan analog. For optimal prodn. of I (X1 = 5-F, X2 = 9-F; R = H, Me), I (X1 = 4-F, X2 = 10-F; R = H, Me), I (X1 = 3-F, X2 = 11-F; R = H, Me), and I (X1 = 2-F, X2 = 12-F; R = H, Me), the medium is supplemented with DL-4-, 5-, 6-, and 7-fluorotryptophan, resp. I (X1 = 3-F, X2 = 10-F, R = Me) at 512 mg/kg i.p. prolonged the median survival time of mice implanted with P388 leukemia cells with a percent T/C of 206%.

IT **138829-50-2P 138829-51-3P 138829-52-4P 138829-53-5P**
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, by fermn. of DL-fluorotryptophan with Saccharothrix aerocolonigenes, as antitumor agent)

RN 138829-50-2 HCAPLUS

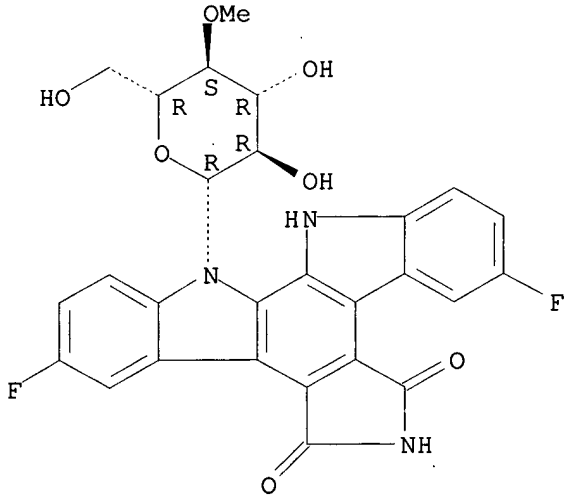
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 2,10-difluoro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



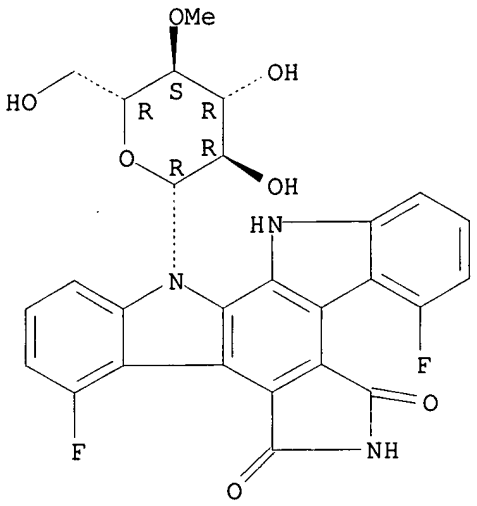
RN 138829-51-3 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 3,9-difluoro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



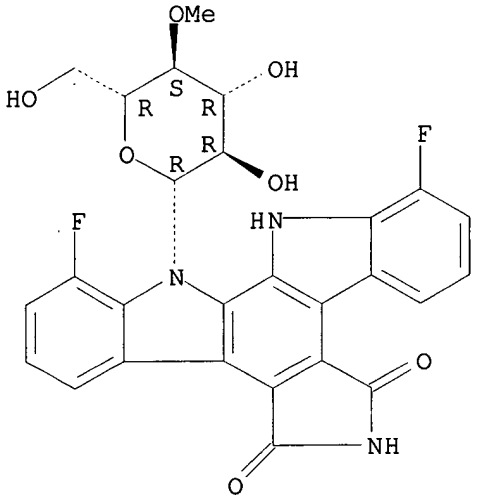
RN 138829-52-4 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 4,8-difluoro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



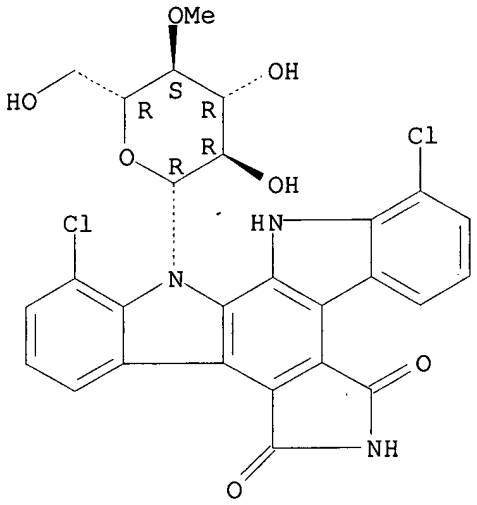
RN 138829-53-5 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-difluoro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **93908-02-2DP**, Rebeccamycin, didechlorodifluoro analogs
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, by fermn. of DL-fluorotryptophan with Saccharothrix aerocolonigenes, as antitumor agents)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

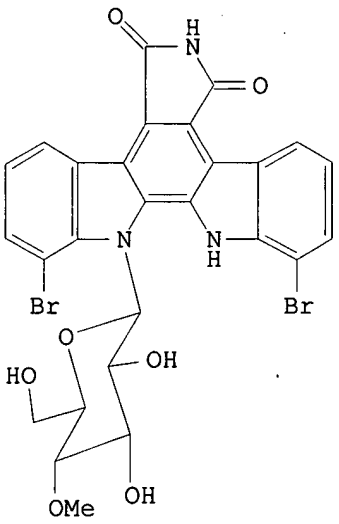
Absolute stereochemistry. Rotation (+).



L7 ANSWER 34 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:82213 HCAPLUS
DOCUMENT NUMBER: 116:82213
TITLE: Bromo-analogs of rebeccamycin from fermentation of Saccharothrix
INVENTOR(S): Lam, Kin Sing; Schroeder, Daniel R.; Mattei, Jaqueline Marie; Matson, James Andrew; Forenza, Salvatore
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co., USA
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 445736	A1	19910911	EP 1991-103317	19910305
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CA 2037596	AA	19910907	CA 1991-2037596	19910305
CA 2037596	C	19950718		
JP 06128282	A2	19940510	JP 1991-38282	19910305
JP 07025787	B4	19950322		
US 5158938	A	19921027	US 1991-764116	19910923

PRIORITY APPLN. INFO.: US 1990-488915 19900306
GI



I

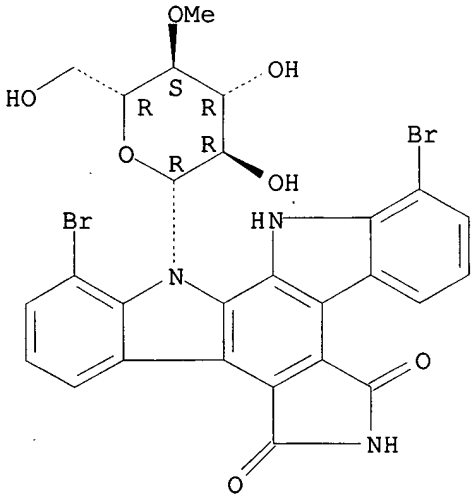
AB A bromo-analog of rebeccamycin (I) is manufd. by cultures of Saccharothrix aerocolonigenes in a medium supplemented with bromide. I is useful as a neoplasm inhibitor. In a 10 L fermn. in a defined medium contg. KBr 0.5 g/L yields of I reached 5.9-7.1 .mu.g/mL after 507 days fermn. at 28.degree..

IT **137605-02-8P**
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, with Saccharothrix aerocolonigenes, bromide-supplemented medium for)

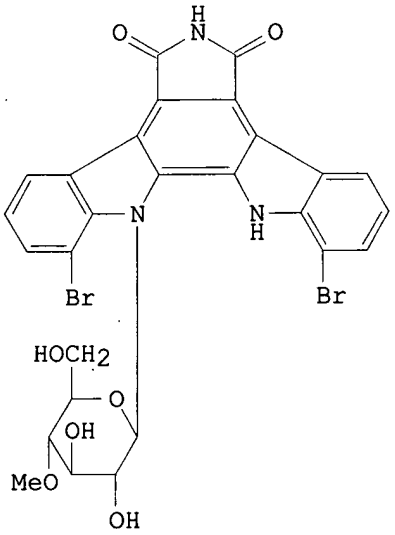
RN 137605-02-8 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dibromo-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 35 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:282 HCAPLUS
DOCUMENT NUMBER: 116:282
TITLE: Isolation of a bromo analog of rebeccamycin from Saccharothrix aerocolonigenes
AUTHOR(S): Lam, Kin Sing; Schroeder, Daniel R.; Veitch, Jacqueline M.; Matson, James A.; Forenza, Salvatore
CORPORATE SOURCE: Bristol-Myers Squibb Co., Wallingford, CT, 06492, USA
SOURCE: Journal of Antibiotics (1991), 44(9), 934-9
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

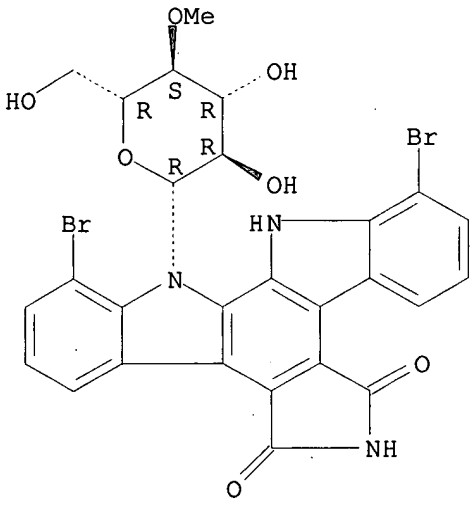
AB When grown in a defined medium contg. 0.05% KBr, S. aerocolonigenes ATCC 39243 produces a novel bromo analog of rebeccamycin designated bromorebeccamycin (I). It was isolated from the culture broth and purified by vacuum liq. chromatog. and column chromatog. Spectroscopic data demonstrated that bromorebeccamycin has the same structure as rebeccamycin, except for the replacement of the two chlorine atoms by bromine atoms in the mol. Bromorebeccamycin and rebeccamycin have similar potency and activity against P388 leukemia in the murine model.

IT **137605-02-8**, Bromorebeccamycin
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Saccharothrix aerocolonigenes, isolation and antileukemic effects of)

RN 137605-02-8 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dibromo-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 36 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:520044 HCAPLUS
DOCUMENT NUMBER: 115:120044
TITLE: Stable solutions of rebeccamycin analog and preparations thereof
INVENTOR(S): Venkataram, Ubrani V.; Franchini, Miriam K.; Bogardus, Joseph B.
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co., USA
SOURCE: Can. Pat. Appl., 18 pp.
CODEN: CPXXEB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2015632	AA	19890510	CA 1990-2015632	19900427
CA 2015632	C	19900427		
US 5496809	A	19960305	US 1989-349608	19890510
FI 95777	B	19951215	FI 1990-2276	19900507
FI 95777	C	19960325		
CZ 283416	B6	19980415	CZ 1990-2255	19900507
RU 2053766	C1	19960210	RU 1990-4743840	19900508
NO 9002048	A	19901112	NO 1990-2048	19900509
NO 176390	B	19941219		
NO 176390	C	19950329		
AU 9054823	A1	19901115	AU 1990-54823	19900509
AU 618896	B2	19920109		
CN 1047204	A	19901128	CN 1990-102658	19900509
CN 1054510	B	20000719		

JP 03017094	A2	19910125	JP 1990-119650	19900509
JP 06043437	B4	19940608		
ZA 9003535	A	19910130	ZA 1990-3535	19900509
ES 2066902	T3	19950316	ES 1990-108739	19900509
HU 54053	A2	19910128	HU 1990-2989	19900510
HU 206627	B	19921228		

PRIORITY APPLN. INFO.: US 1989-349608 A 19890510

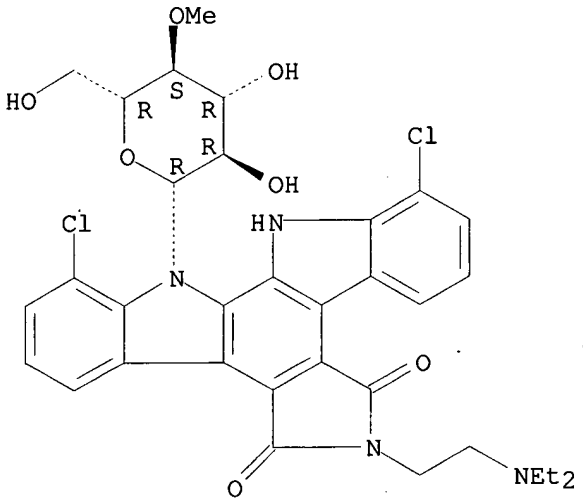
AB A stable antitumor soln. contains 8-N-(diethylaminoethyl)rebeccamycin (I), an acid solubilizer such as tartaric acid, and water at pH 3.0-3.6. An injection soln. was prepd. comprising 10.4 g I, 2.26 g L-(+)-tartaric acid, and water to 1000 mL.

IT **119673-08-4 119673-08-4D**, analogs
RL: BIOL (Biological study)
(antitumor injection soln. contg. acids and)

RN 119673-08-4 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

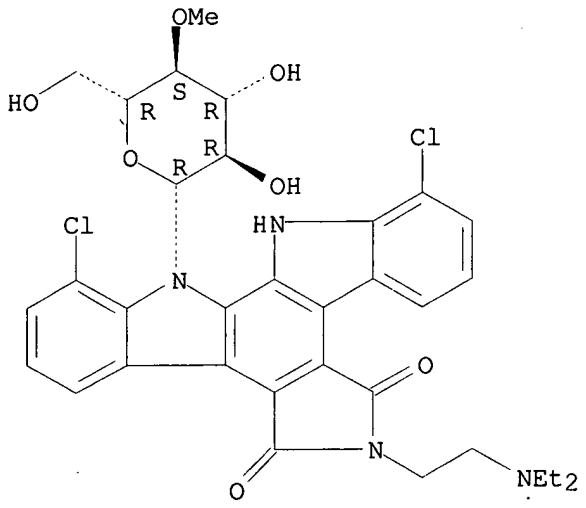
Absolute stereochemistry.



RN 119673-08-4 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 37 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:435719 HCAPLUS
DOCUMENT NUMBER: 115:35719
TITLE: Anticancer solutions containing stabilized 8-N-(diethylaminoethyl)rebeccamycin
INVENTOR(S): Venkataram, Ubrani V.; Franchini, Miriam K.; Bogardus, Joseph B.
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co., USA
SOURCE: Eur. Pat. Appl., 7 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 397147	A2	19901114	EP 1990-108739	19900509
EP 397147	A3	19910612		
EP 397147	B1	19950118		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 5496809	A	19960305	US 1989-349608	19890510
FI 95777	B	19951215	FI 1990-2276	19900507
FI 95777	C	19960325		
CZ 283416	B6	19980415	CZ 1990-2255	19900507
RU 2053766	C1	19960210	RU 1990-4743840	19900508
NO 9002048	A	19901112	NO 1990-2048	19900509
NO 176390	B	19941219		
NO 176390	C	19950329		
AU 9054823	A1	19901115	AU 1990-54823	19900509
AU 618896	B2	19920109		
CN 1047204	A	19901128	CN 1990-102658	19900509
CN 1054510	B	20000719		
JP 03017094	A2	19910125	JP 1990-119650	19900509
JP 06043437	B4	19940608		
ZA 9003535	A	19910130	ZA 1990-3535	19900509

ES 2066902	T3	19950316	ES 1990-108739	19900509
HU 54053	A2	19910128	HU 1990-2989	19900510
HU 206627	B	19921228		

PRIORITY APPLN. INFO.: US 1989-349608 A 19890510

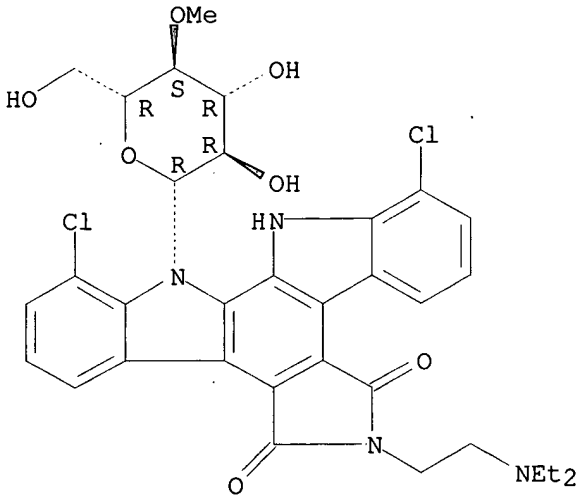
AB Stable solns. of the title compd. (I) consist essentially of (1) water, (2) an effective dosage amt. of I, and (3) a pharmaceutically acceptable acid such that the presence of a molar equivalence thereof would solubilize (2), the acid being present in excess of the molar equivalence to provide a stabilizing pH of 3-4, preferably 3.0-3.6. Thus, an injectable soln. was prepd. which contained I (free base) and L-(+)-tartaric acid in a 1:1 molar ratio and had pH 3.5. Testing by storage for 4 wk at .ltoreq.56.degree. provided no phys. or chem. changes, indicating a probably shelf life of .gtoreq.2 yr when stored at 2-30, protected from light. The tartaric acid-contg. solns. of the invention were shown to have antineoplastic activity against transplanted mouse leukemia P-338.

IT **119673-08-4**
RL: BIOL (Biological study)
(anticancer injections contg. acid solubilizer and)

RN 119673-08-4 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

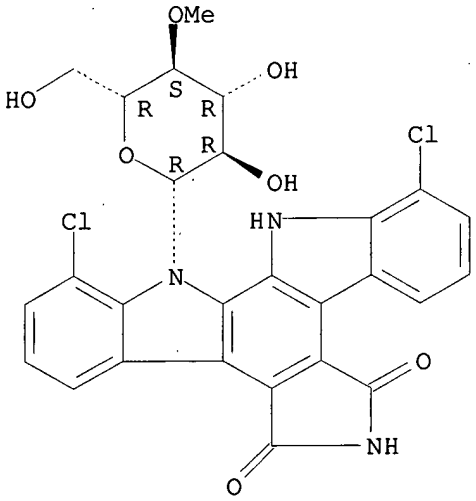


L7 ANSWER 38 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

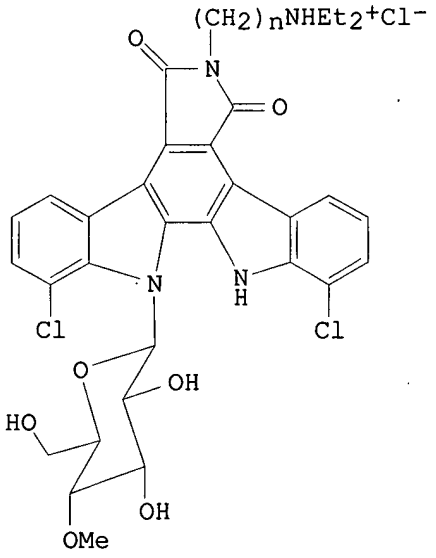
ACCESSION NUMBER:	1991:404881 HCAPLUS
DOCUMENT NUMBER:	115:4881
TITLE:	Identification of indolepyruvic acid as an intermediate of rebeccamycin biosynthesis
AUTHOR(S):	Lam, Kin Sing; Forenza, Salvatore; Doyle, Terrance W.; Pearce, Cedric J.
CORPORATE SOURCE:	Bristol-Myers Squibb Co., Wallingford, CT, 06492, USA
SOURCE:	Journal of Industrial Microbiology (1990), 6(4), 291-4

CODEN: JIMIE7; ISSN: 0169-4146
DOCUMENT TYPE: Journal
LANGUAGE: English
AB [3-14C]Indolepyruvic acid was prepd. and efficiently incorporated (8%) into rebeccamycin by Saccharothrix aerocolonigenes.
IT **93908-02-2**, Rebeccamycin
RL: FORM (Formation, nonpreparative)
(formation of, by Saccharothrix aerocolonigenes, indolepyruvic acid as intermediate in)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 39 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:217391 HCAPLUS
DOCUMENT NUMBER: 112:217391
TITLE: Water soluble derivatives of rebeccamycin
AUTHOR(S): Kaneko, Takushi; Wong, Henry; Utzig, Jacob; Schurig, John; Doyle, Terrence W.
CORPORATE SOURCE: Pharm. Res. Dev. Div., Bristol-Myers Co., Wallingford, CT, 06492, USA
SOURCE: Journal of Antibiotics (1990), 43(1), 125-7
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 112:217391
GI



I

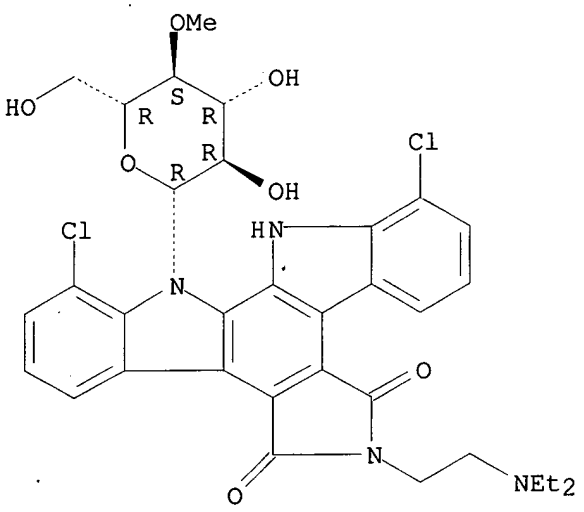
AB Rebeccamycin was treated with 1 aq. NaH in DMF at room temp. followed by addn. of Et2N(CH2)nCl (n = 2, 3) to give, after treatment with HCl-Et2O, the title compds. I. I appeared to possess the desired soly. and antitumor activity.

IT **119673-08-4P 119673-10-8P 127099-93-8P 127099-94-9P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. and antitumor activity of)

RN 119673-08-4 HCAPLUS

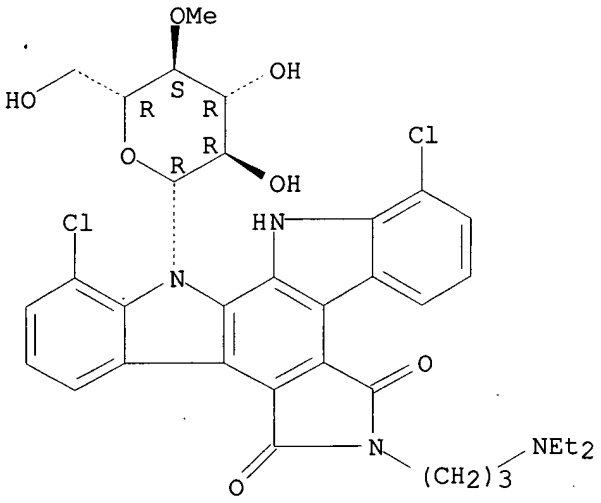
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



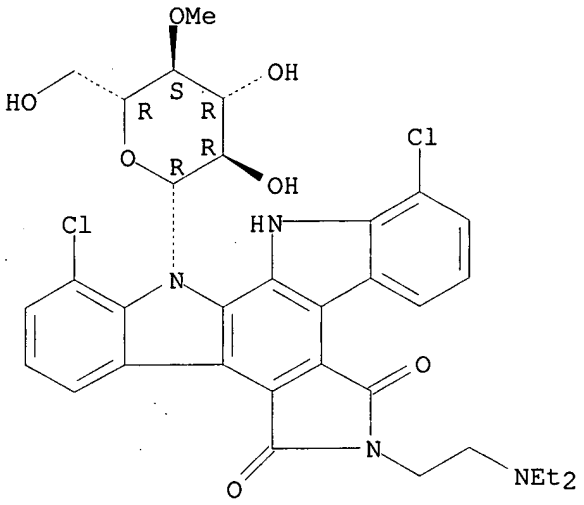
RN 119673-10-8 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[3-(diethylamino)propyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 127099-93-8 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-, monohydrochloride (9CI) (CA INDEX NAME)

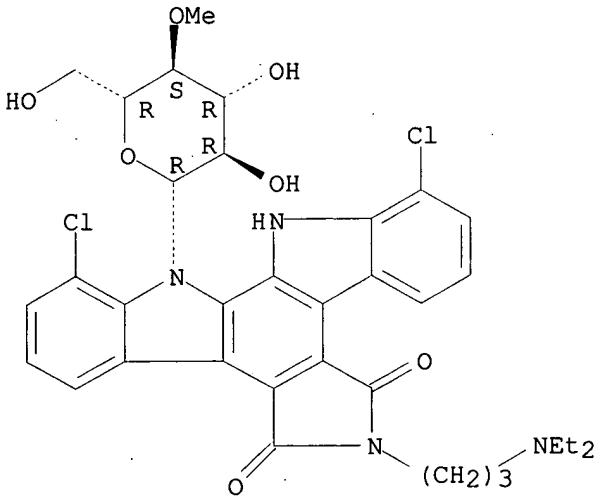
Absolute stereochemistry.



● HCl

RN 127099-94-9 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[3-(diethylamino)propyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

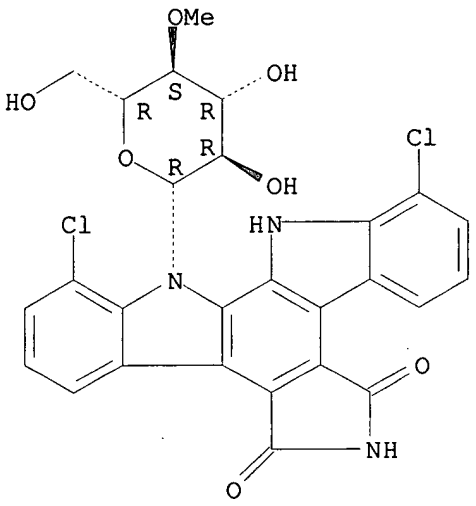


● HCl

IT **93908-02-2,** Rebeccamycin

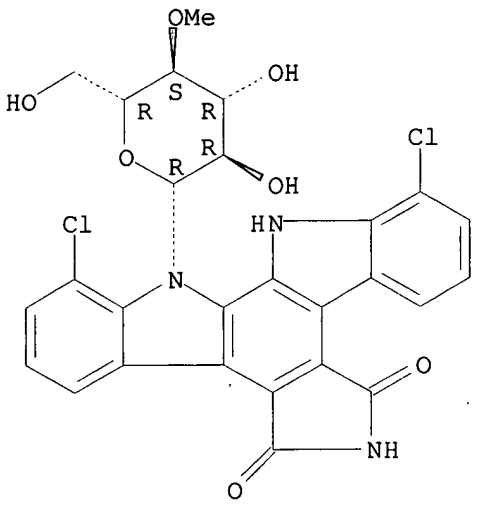
RL: RCT (Reactant); RACT (Reactant or reagent)
(N-alkylation of)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 40 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:628738 HCAPLUS
DOCUMENT NUMBER: 111:228738
TITLE: Biosynthesis of rebeccamycin, a novel antitumor agent
AUTHOR(S): Lam, Kin Sing; Forenza, Salvatore; Schroeder, Daniel R.; Doyle, Terrence W.; Pearce, Cedric J.
CORPORATE SOURCE: Pharm. Res. Dev. Div., Bristol-Myers Co., Wallingford, CT, USA
SOURCE: Novel Microb. Prod. Med. Agric., [Pap. Int. Conf. Biotechnol. Microb. Prod.], 1st (1989), Meeting Date 1988, 63-6. Editor(s): Demain, Arnold L. Elsevier: Amsterdam, Neth.
CODEN: 56RDAV
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Data show that the antitumor secondary metabolite rebeccamycin is biosynthesized by Saccharothrix aerocolonigenes from 1 unit of glucose, 1 of methionine and 2 of tryptophan, with neither .alpha.-amine donating the N of the phthalimide system.
IT **93908-02-2**, Rebeccamycin
RL: FORM (Formation, nonpreparative)
(formation of, by Saccharothrix aerocolonigenes)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



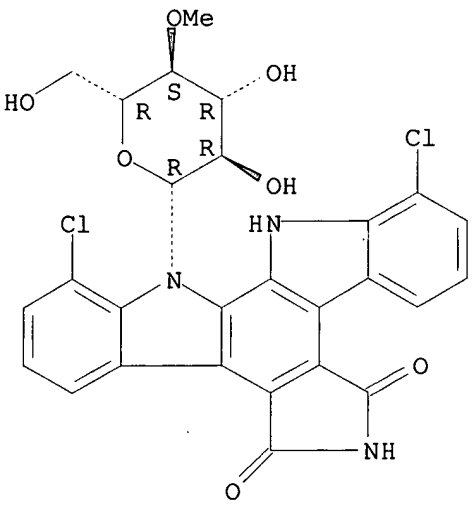
L7 ANSWER 41 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:171715 HCAPLUS
DOCUMENT NUMBER: 110:171715
TITLE: Carbon catabolite regulation of rebeccamycin production in Saccharothrix aerocolonigenes
AUTHOR(S): Lam, Kin Sing; Mattei, Jacqueline; Forenza, Salvatore
CORPORATE SOURCE: Pharm. Res. Dev. Div., Bristol-Myers Co., Wallingford, CT, USA
SOURCE: Journal of Industrial Microbiology (1989), 4(2), 105-8
CODEN: JIMIE7; ISSN: 0169-4146
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new antitumor antibiotic named rebeccamycin was isolated from fermns. of an actinomycete, S. aerocolonigenes. A defined medium was developed to study the regulation of synthesis of rebeccamycin by S. aerocolonigenes. In glucose medium formation of rebeccamycin was detected only after glucose was depleted. Examn. of 11 different C sources revealed that catabolite regulation is a major control mechanism for rebeccamycin prodn.

IT **93908-02-2P**, Rebeccamycin
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, by Saccharothrix aerocolonigenes, carbon catabolite regulation of)

RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 42 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:135647 HCAPLUS
DOCUMENT NUMBER: 110:135647
TITLE: Preparation of rebeccamycin analogs as antitumors and pharmaceutical compositions containing them
INVENTOR(S): Kaneko, Takushi; Wong, Henry S.; Utzig, Jacob J.
PATENT ASSIGNEE(S): Bristol-Myers Co., USA
SOURCE: Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

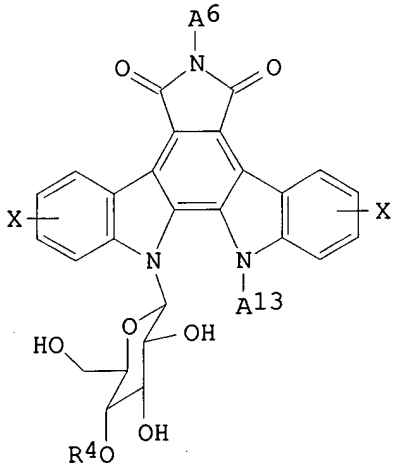
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 269025	A2	19880601	EP 1987-117167	19871120
EP 269025	A3	19900829		
EP 269025	B1	19930113		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 4785085	A	19881115	US 1986-933428	19861121
AU 8781148	A1	19880526	AU 1987-81148	19871112
AU 614068	B2	19910822		
CS 265248	B2	19891013	CS 1987-8249	19871117
FI 8705091	A	19880522	FI 1987-5091	19871118
FI 86189	B	19920415		
FI 86189	C	19920727		
IL 84515	A1	19911121	IL 1987-84515	19871118
DK 8706129	A	19880522	DK 1987-6129	19871120
DK 165986	B	19930222		
DK 165986	C	19930719		
NO 8704857	A	19880524	NO 1987-4857	19871120
NO 167741	B	19910826		
NO 167741	C	19911204		
ZA 8708714	A	19880727	ZA 1987-8714	19871120

HU 45543	A2	19880728	HU 1987-5164	19871120
HU 201773	B	19901228		
CN 87107928	A	19880810	CN 1987-107928	19871120
CN 1019806	B	19921230		
JP 63198695	A2	19880817	JP 1987-293854	19871120
JP 05000400	B4	19930105		
CA 1287349	A1	19910806	CA 1987-552337	19871120
AT 84539	E	19930115	AT 1987-117167	19871120
ES 2053510	T3	19940801	ES 1987-117167	19871120
US 4808613	A	19890228	US 1988-169785	19880318

PRIORITY APPLN. INFO.: US 1986-933428 19861121
EP 1987-117167 19871120

OTHER SOURCE(S): MARPAT 110:135647

GI



I

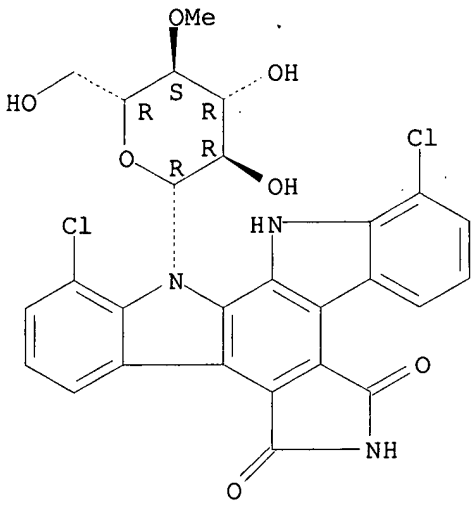
AB The title compds. [I; A6, A13 = (CH2)nR1R2; R1, R2 = H, alkyl, aralkyl, (un)substituted phenyl; or R1R2 = (oxa)(aza)alkylene; R4 = H, Me; n = integer 1-6; X = H, F, Cl, Br, alkyl, OH, CO2H, alkoxycarbonyl, alkoxy, benzyloxy, amino, mono- and dialkylamino] and their pharmaceutically acceptable salts, useful as antitumors, are prepd. and used in pharmaceutical compns. A mixt. of rebeccamycin and NaH in DMF was stirred at room temp. for 20 min, ClCH2CH2NEt2 added, and the resulting mixt. stirred for 24 h to give 6-(2-diethylaminoethyl)rebeccamycin (II). In a test using mouse leukemia P-388 tumor cells II.HCl at 8 mg/kg i.p. showed a redn. of 0.4 g in tumor size on the 4th day and a mean survival time (MST) of 12.0 days vs. a tumor redn. of 2.0 g and a MST of 19.0 days for mitomycin C.

IT **93908-02-2**, Rebeccamycin
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, by aminoalkyl halide)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

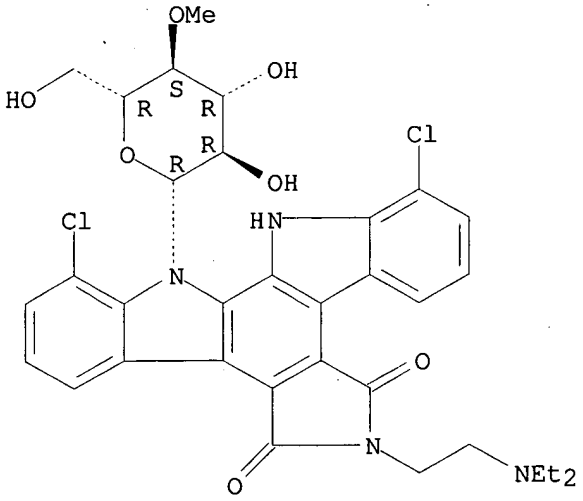


IT **119673-08-4P 119673-09-5P 119673-10-8P**
119673-11-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of, as antitumor agent)

RN 119673-08-4 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

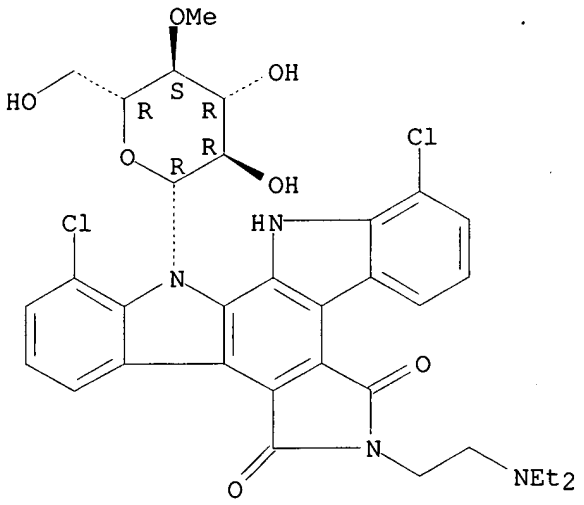
Absolute stereochemistry.



RN 119673-09-5 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[2-(diethylamino)ethyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-, hydrochloride (9CI) (CA INDEX NAME)

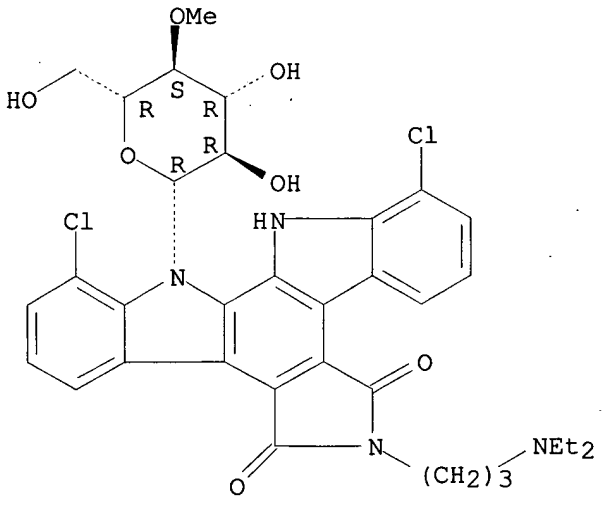
Absolute stereochemistry.



●x HCl

RN 119673-10-8 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[3-(diethylamino)propyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

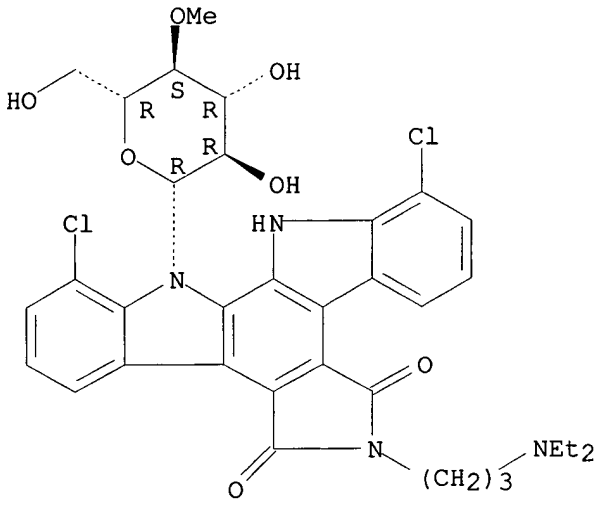
Absolute stereochemistry.



RN 119673-11-9 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-6-[3-(diethylamino)propyl]-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-, hydrochloride (9CI) (CA INDEX

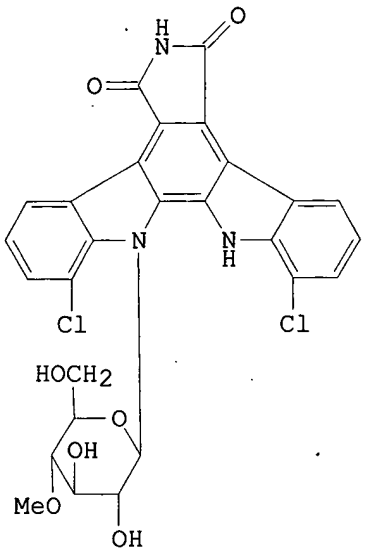
NAME)

Absolute stereochemistry.



●x HCl

L7 ANSWER 43 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1988:626419 HCAPLUS
DOCUMENT NUMBER: 109:226419
TITLE: The biosynthetic origins of rebeccamycin
AUTHOR(S): Pearce, Cedric J.; Doyle, Terence W.; Forenza, Salvatore; Lam, Kin S.; Schroeder, Daniel R.
CORPORATE SOURCE: Antitumor Chem. Div., Bristol-Myers Pharm. Res. and Dev. Div., Wallingford, CT, 06492, USA
SOURCE: Journal of Natural Products (1988), 51(5), 937-40
CODEN: JNPRDF; ISSN: 0163-3864
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

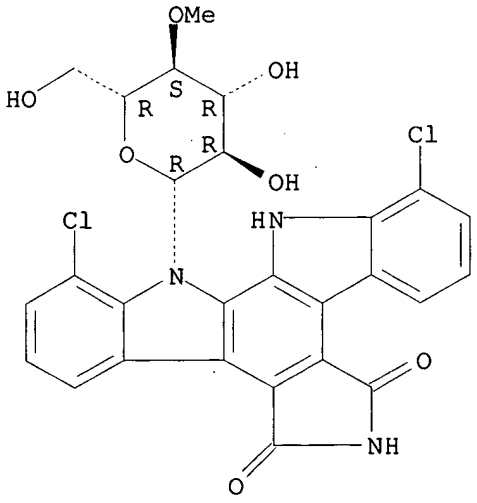
AB The antitumor-antibiotic rebeccamycin (I) is biosynthesized by Saccharothrix aerocolonigenes from 1 unit of glucose, 1 of methionine, and 2 of tryptophan. The .alpha.-amino group of neither tryptophan unit provides the N of the phthalimide system.

IT **93908-02-2,** Rebeccamycin
RL: FORM (Formation, nonpreparative)
(formation of, by Saccharothrix aerocolonigenes)

RN 93908-02-2 HCAPLUS

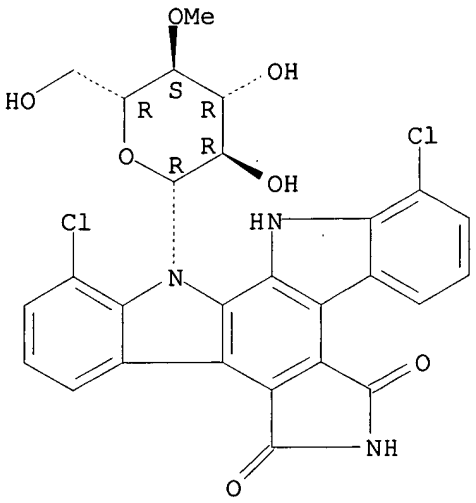
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 44 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1987:597880 HCAPLUS
DOCUMENT NUMBER: 107:197880
TITLE: Total synthesis of three natural products: syncarpurea, rebeccamycin, and psammaplysin-A
AUTHOR(S): Okamoto, Kelvin Tsugio
CORPORATE SOURCE: Cornell Univ., Ithaca, NY, USA
SOURCE: (1987) 100 pp. Avail.: Univ. Microfilms Int., Order No. DA8709006
From: Diss. Abstr. Int. B 1987, 48(1), 340
DOCUMENT TYPE: Dissertation
LANGUAGE: English
AB Unavailable
IT **93908-02-2P**, Rebeccamycin
RL: SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 45 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1987:568346 HCAPLUS
DOCUMENT NUMBER: 107:168346
TITLE: In vivo characterization of P388 leukemia resistant to mitomycin C
AUTHOR(S): Rose, William C.; Huftalen, James B.; Bradner, William T.; Schurig, John E.
CORPORATE SOURCE: Pharm. Res. Dev. Div., Bristol-Myers Res. Cent., Wallingford, CT, 06492, USA
SOURCE: In Vivo (1987), 1(1), 47-52
CODEN: IVIVE4; ISSN: 0258-851X
DOCUMENT TYPE: Journal
LANGUAGE: English

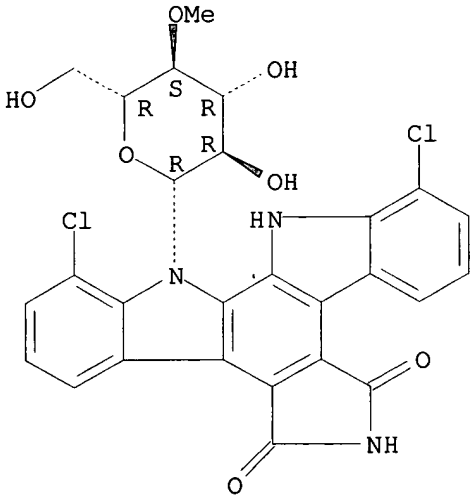
AB A line of P388 leukemia resistant to mitomycin C (MMC) was developed in vivo by treating mice bearing parental P388 (P388/0) with MMC followed by serial passage of the surviving leukemic cells. From this P388/MMC line, a subline was derived by not treating the passage mice with MMC (P388/MMC-NP); resistance to MMC was stable for <56 wk of transplantation. The chemosensitivities of each P388 line to assorted anticancer drugs were compared in vivo. Both P388/MMC and P388/MMC-NP had similar patterns of drug cross-resistance and collateral sensitivity. With respect to the alkylating agents cyclophosphamide, Platinol, and chlorambucil, there was generally a partial degree of cross-resistance, sometimes detectable only at suboptimal dose levels. With respect to the DNA binders or intercalators actinomycin D, luzopeptin A, amsacrine, and doxorubicin, the extent of cross-resistance varied from none (dihydroxyanthraquinone) to marked (doxorubicin). The antimitotic inhibitors vinblastine and vincristine were completely cross-resistant, as were some misc. natural agents such as rebeccamycin, VP-16, sesbanimide, and elsamicin, a chartreusin analog. Methotrexate and 6-thioguanine showed no cross-resistance and even demonstrated some occasional evidence of collateral effectiveness.

IT **93908-02-2**, Rebeccamycin
RL: BIOL (Biological study)
(resistance to, in leukemia cells, mitomycin C resistance induction of)

RN 93908-02-2 HCAPLUS

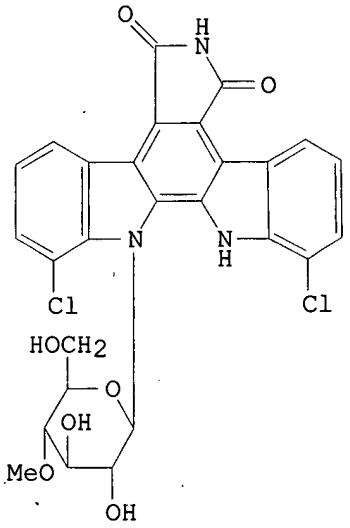
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 46 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1987:493202 HCAPLUS
DOCUMENT NUMBER: 107:93202
TITLE: Production and biological activity of rebeccamycin, a novel antitumor agent

AUTHOR(S): Bush, J. A.; Long, B. H.; Catino, J. J.; Bradner, W. T.; Tomita, K.
CORPORATE SOURCE: Pharm. Res. Dev. Div., Bristol-Myers Co., Wallingford, CT, 06492, USA
SOURCE: Journal of Antibiotics (1987), 40(5), 668-78
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

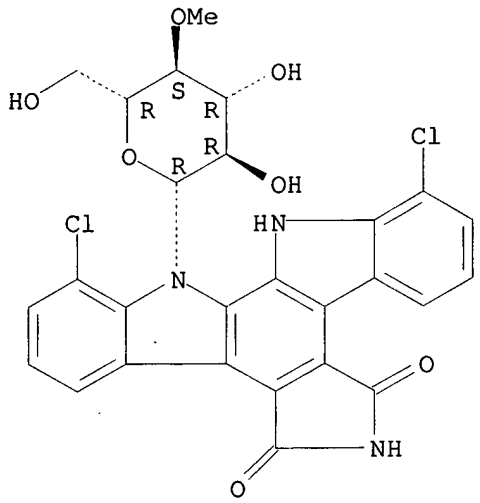


I

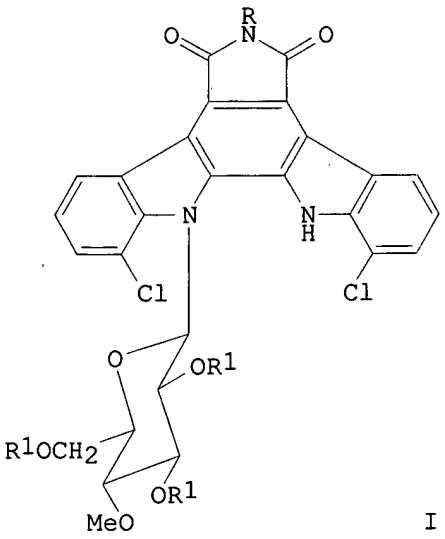
AB An actinomycete, strain C-38,383, was selected in a screening program for the isolation of novel antitumor agents. A yellow cryst. product, named rebeccamycin (I), was isolated from the mycelium and was found to have activity against P388 leukemia, L1210 leukemia, and B16 melanoma implanted in mice. Rebeccamycin inhibits the growth of human lung adenocarcinoma cells (A549) and produces single-strand breaks in the DNA of these cells. No DNA-protein cross-links were detected. A related antibiotic, staurosporine, is produced by Streptomyces staurosporeus and S. actuosus. Strain C-38,383 was found to resemble closely strains of Nocardia aerocolonigenes that was renamed Saccharothrix aerocolonigenes. A strain selection isolate without aerial mycelium, C-38,383-RK-1, failed to produce rebeccamycin, while a strain with aerial mycelium, C-38,,383-RK-2, was found to be a suitable strain for prodn. A description of the producing strain is presented, and its taxonomic position is reviewed. A fermentor contg. 37 L of prodn. medium gave a rebeccamycin yield of 663 mg/L after 204 h of incubation with strain C-38,383-RK-2.
IT **93908-02-2**, Rebeccamycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(from actinomycte, antitumor activity of)
RN 93908-02-2 HCAPLUS
CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione,

1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)-
(9CI) (CA INDEX NAME)

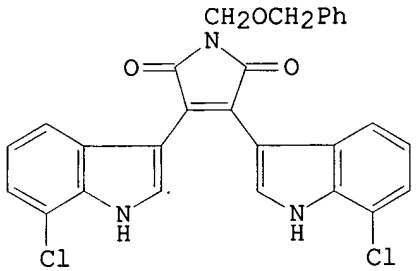
Absolute stereochemistry. Rotation (+).



L7 ANSWER 47 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:207579 HCAPLUS
DOCUMENT NUMBER: 104:207579
TITLE: Two synthetic approaches to rebeccamycin
AUTHOR(S): Kaneko, T.; Wong, H.; Okamoto, K. T.; Clardy, J.
CORPORATE SOURCE: RD Div., Bristol-Myers Pharm., Syracuse, NY, 13221-4755, USA
SOURCE: Tetrahedron Letters (1985), 26(34), 4015-18
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 104:207579
GI



I



III

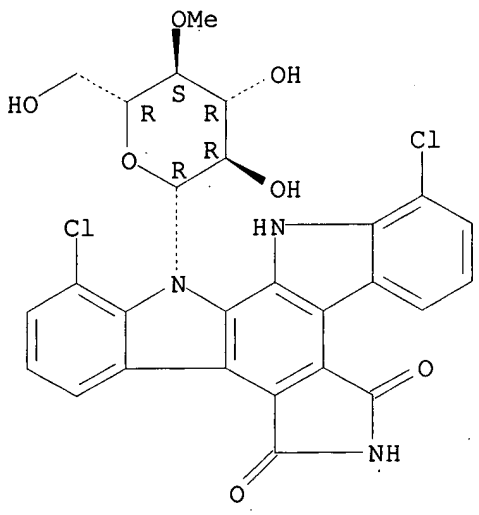
AB Two synthetic approaches to a new indolocarbazole antitumor antibiotic, rebeccamycin I (R = R1 = H) (II), were developed, and the abs. configuration of II was detd. by total synthesis. For example, 7-chloroindole was treated at room temp. with 4 equiv. of MeMgI and 1 equiv. of N-(benzyloxymethyl)-2,3--dibromomaleimide in C6H6 contg. a small amt. of HMPA to give 27% a 2:1 adduct III, which was refluxed with 1-bromo-2,3,6-tri-O-acetyl-4-O-methylglucose in C6H6 contg. Ag2O to give I (R = CH2OCH2Ph, R1 = Ac), which on hydrogenolysis followed by ammonolysis gave II.

IT **93908-02-2P**
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (synthesis of)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

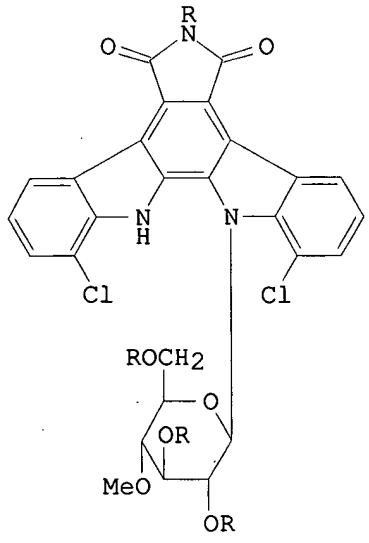
Absolute stereochemistry. Rotation (+).



L7 ANSWER 48 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:	1985:575056 HCAPLUS
DOCUMENT NUMBER:	103:175056
TITLE:	Isolation and structure of rebeccamycin - a new antitumor antibiotic from Nocardia aerocoligenes
AUTHOR(S):	Nettleton, D. E.; Doyle, T. W.; Krishnan, B.; Matsumoto, G. K.; Clardy, J.
CORPORATE SOURCE:	RD Div., Bristol-Myers Pharm., Syracuse, NY, 13221-4755, USA
SOURCE:	Tetrahedron Letters (1985), 26(34), 4011-14 CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE:	Journal
LANGUAGE:	English

GI



I, R=H

II, R=Ac

Searcher : Shears 308-4994

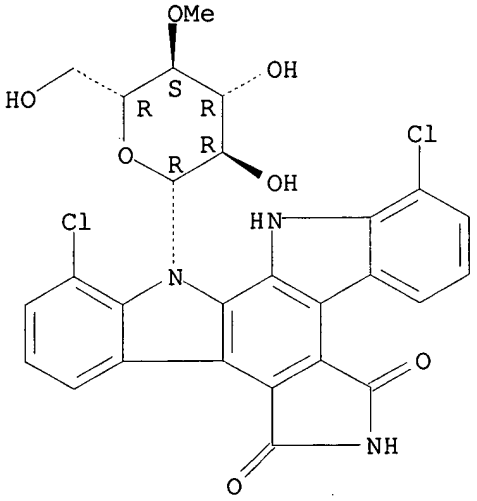
AB The isolation and structure of rebeccamycin (I), a new antitumor agent from N. aerocoligenes, are described. The NMR spectra of I and its peracetate (II) are discussed.

IT **93908-02-2**
RL: BIOL (Biological study)
(from Nocardia aerocoligenes, isolation and structure of and neoplasm inhibition by)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 49 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1985:559104 HCAPLUS

DOCUMENT NUMBER: 103:159104

TITLE: 4'-Deschlororebeccamycin pharmaceutical composition

INVENTOR(S): Matson, James A.

PATENT ASSIGNEE(S): Bristol-Myers Co. , USA

SOURCE: U.S., 9 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

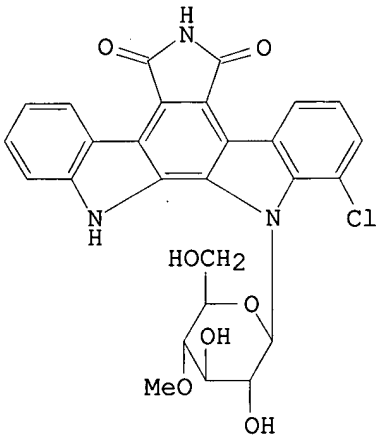
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4524145	A	19850618	US 1984-646673	19840904
US 4567143	A	19860128	US 1985-690271	19850318
DK 8501955	A	19860305	DK 1985-1955	19850501
DK 160280	B	19910218		
DK 160280	C	19910722		

Searcher : Shears 308-4994

SE 8502135	A	19860305	SE 1985-2135	19850502
SE 466207	B	19920113		
SE 466207	C	19920521		
HU 39479	A2	19860929	HU 1985-1739	19850508
HU 193973	B	19871228		
GB 2164035	A1	19860312	GB 1985-12334	19850515
GB 2164035	B2	19880817		
CA 1249235	A1	19890124	CA 1985-481859	19850517
FR 2569702	A1	19860307	FR 1985-8250	19850531
FR 2569702	B1	19881028		
JP 61148192	A2	19860705	JP 1985-131616	19850617
JP 03062715	B4	19910926		

PRIORITY APPLN. INFO.: US 1984-646673 19840904

GI



I

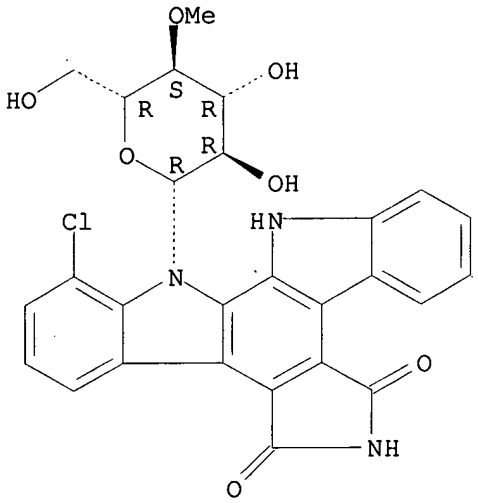
AB 4'-Deschlororebeccamycin (I) [**97938-09-5**] is an antitumor antibiotic produced by fermn. of Nocardia aerocolonigenes. Thus, N. aerocolonigenes ATCC 39243 was grown on agar slants and the surface growth was inoculated into a prodn. medium consisting of corn starch 60, glucose 10, linseed meal 15, autolyzed yeast 5, $FeSO_4.7H_2O$ 1, $NH_4H_2PO_4$ 18, $(NH_4)_2SO_4$ 18, and $CaCO_3$ 10 g/L. After 7-day incubation at 27.degree. with stirring (250 rpm), I was isolated from mycelial mats by extn. with THF followed by repeated column chromatog. I is a yellow amorphous solid with mol. wt. 535.8, and possess characteristic IR, UV, and H1 NMR spectra. I inhibits gram-pos. and gram-neg. bacteria was well as mammalian neoplasms, such as murine leukemia P-388.

IT **97938-09-5**
RL: BIOL (Biological study)
(antibiotic and neoplasm inhibitor, from Nocardia aerocolonigenes)

RN 97938-09-5 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1-chloro-12,13-dihydro-13-(4-O-methyl-.beta.-D-glucopyranosyl)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L7 ANSWER 50 OF 50 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1985:22793 HCAPLUS
DOCUMENT NUMBER: 102:22793
TITLE: Rebeccamycin
INVENTOR(S): Nettleton, Donald Edward; Bradner, William Turnbull; Bush, James Allen; Doyle, Terrence William
PATENT ASSIGNEE(S): Bristol-Myers Co. , USA
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 115350	A2	19840808	EP 1984-100888	19840127
EP 115350	A3	19850918		
EP 115350	B1	19880817		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 4487925	A	19841211	US 1983-461817	19830128
CA 1220149	A1	19870407	CA 1984-445529	19840118
AU 8423720	A1	19840802	AU 1984-23720	19840124
AU 564256	B2	19870806		
FI 8400301	A	19840729	FI 1984-301	19840125
FI 77264	B	19881031		
FI 77264	C	19890210		
ZA 8400582	A	19840926	ZA 1984-582	19840125
ES 529170	A1	19860516	ES 1984-529170	19840126
DK 8400356	A	19910311	DK 1984-356	19840126
DK 160429	C	19910819		
JP 59141597	A2	19840814	JP 1984-12156	19840127
JP 04052280	B4	19920821		
AT 36540	E	19880915	AT 1984-100888	19840127

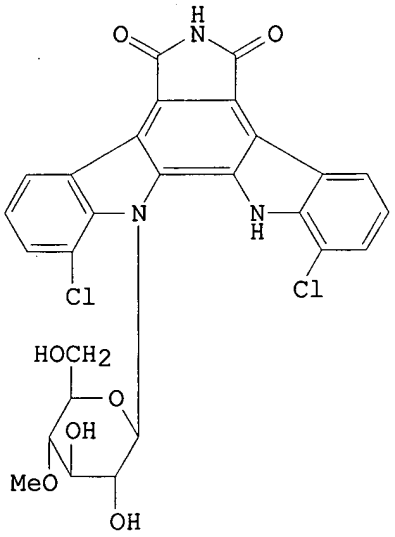
US 4552842	A	19851112	US 1984-599918	19840413
FI 8802363	A	19880519	FI 1988-2363	19880519
FI 80047	B	19891229		

PRIORITY APPLN. INFO.:

US 1983-461817	19830128
FI 1984-301	19840125
EP 1984-100888	19840127

OTHER SOURCE(S): CASREACT 102:22793

GI



I

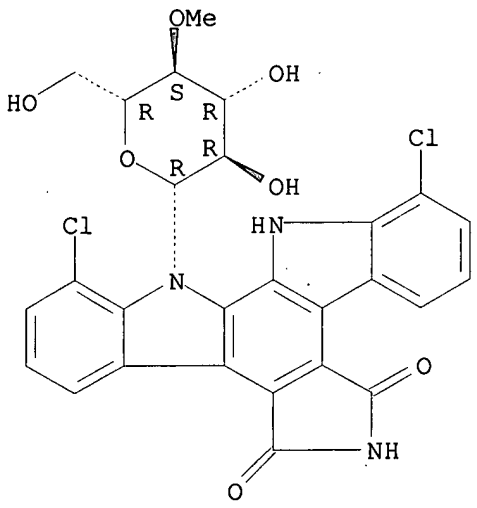
AB The novel antitumor agent rebeccamycin (I) [**93908-02-2**] is produced by fermn. with Nocardia aerocolonigenes. Thus, a preculture of N. aerocolonigenes ATCC 39243 was inoculated into a prodn. medium contg. corn starch 60, glucose 10, linseed meal 15, autolyzed yeast 5, FeSO4.7H2O 1, NH4H2PO4 1, (NH4)2SO4 1, and CaCO3 10 g/L and incubated at 27.degree. for 168 h with shaking. I was extd. from the cell mass with THF. The ext. was concd. to leave an aq. milky residue contg. fine solids and oils. The oils were removed with Et2O and the solids at the interface were filtered to yield crude I. I was purified by repeated crystn. from THF by addn. of MeOH. The yield was .apprx.500 mg from 8 L broth. I inhibited malignant tumors in mice.

IT **93908-02-2**
RL: BIOL (Biological study)
(tumor inhibitor, from Nocardia aerocolonigenes)

RN 93908-02-2 HCAPLUS

CN 5H-Indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione, 1,11-dichloro-12,13-dihydro-12-(4-O-methyl-.beta.-D-glucopyranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



E1 THROUGH E41 ASSIGNED

FILE 'REGISTRY' ENTERED AT 15:46:21 ON 09 SEP 2003
L8 41 SEA FILE=REGISTRY ABB=ON PLU=ON (93908-02-2/BI OR 156330-65-3/BI OR 119673-08-4/BI OR 183747-10-6/BI OR 183747-09-3/BI OR 151069-11-3/BI OR 151069-54-4/BI OR 196297-71-9/BI OR 196297-72-0/BI OR 205386-72-7/BI OR 119673-10-8/BI OR 137605-02-8/BI OR 183747-08-2/BI OR 183747-11-7/BI OR 205386-78-3/BI OR 97938-09-5/BI OR 119673-09-5/BI OR 119673-11-9/BI OR 127099-93-8/BI OR 127099-94-9/BI OR 138829-50-2/BI OR 138829-51-3/BI OR 138829-52-4/BI OR 138829-53-5/BI OR 151069-52-2/BI OR 151069-53-3/BI OR 151069-55-5/BI OR 186966-45-0/BI OR 205386-79-4/BI OR 215796-54-6/BI OR 215796-55-7/BI OR 220726-68-1/BI OR 220726-71-6/BI OR 220726-73-8/BI OR 220726-75-0/BI OR 220726-77-2/BI OR 220726-79-4/BI OR 220726-81-8/BI OR 223750-63-8/BI OR 223750-64-9/BI OR 226557-22-8/BI)

FILE 'CAOLD' ENTERED AT 15:46:42 ON 09 SEP 2003
L9 0 S L8

FILE 'USPATFULL' ENTERED AT 15:46:47 ON 09 SEP 2003
L10 17 S L8

L10 ANSWER 1 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2002:199128 USPATFULL
TITLE: Topoisomerase inhibitors
INVENTOR(S): Saulnier, Mark G., Higganum, CT, UNITED STATES
Ruediger, Edward H., Greenfield Park, CANADA
Balasubramanian, Neelakantan, Madison, CT, UNITED STATES
Mahler, Mikael, Outremont, CANADA
Beaulieu, Francis, Laprairie, CANADA
Bachand, Carol, Candiac, CANADA
Frennesson, David B., Naugatuck, CT, UNITED STATES

Searcher : Shears 308-4994

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002107237	A1	20020808
APPLICATION INFO.:	US 2001-965976	A1	20010927 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-238726P	20001006 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: STEPHEN B. DAVIS, BRISTOL-MYERS SQUIBB COMPANY, PATENT DEPARTMENT, P O BOX 4000, PRINCETON, NJ, 08543-4000
NUMBER OF CLAIMS: 1
EXEMPLARY CLAIM: 1
LINE COUNT: 1234
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel N12, N13-bridged sugar derivatives of indolylopyrrolocarbazoles and pharmaceutical formulations thereof which exhibit topoisomerase-I activity and are useful in inhibiting the proliferation of tumor cells.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 2 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2002:106301 USPATFULL
TITLE: New compounds of 12,13-(pyranosyl)-indolo[2,3-a]pyrrolo[3,4-c]carbazole and 12,13-(pyranosyl)-furo[3,4-c]indolo[2,3-a]carbazole
INVENTOR(S): Prudhomme, Michelle, Clermont-Ferrand, FRANCE
Moreau, Pascale, Clermont-Ferrand, FRANCE
Anizon, Fabrice, Ennezat, FRANCE
Marminon, Christelle, Maison-Lafitte, FRANCE
Atassi, Ghanem, Saint-Cloud, FRANCE
Pierre, Alain, Les Alluets Le Roi, FRANCE
Pfeiffer, Bruno, Saint Leu La Foret, FRANCE
Renard, Pierre, Le Chesnay, FRANCE

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002055510	A1	20020509
	US 6569858	B2	20030527
APPLICATION INFO.:	US 2001-10379	A1	20011105 (10)

RELATED APPLN. INFO.: Continuation of Ser. No. US 2000-714746, filed on 16 Nov 2000, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	FR 1999-14433	19991117

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: THE FIRM OF HUESCHEN AND SAGE, 500 COLUMBIA PLAZA, 350 EAST MICHIGAN AVENUE, KALAMAZOO, MI, 49007
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1

LINE COUNT: 1157
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A compound selected from those of formula (I): ##STR1##

wherein:

R.sub.1 and R.sub.2, which may be identical or different, represent a group of formula U-V wherein U represents single bond, or alkylene which is optionally substituted and/or unsaturated, and V is as defined in the description,

G represents oxygen, or NR.sup.3 wherein R.sub.3 is as defined in the description,

X represents hydrogen, hydroxy, alkoxy, mercapto or alkylthio, Y represents hydrogen, or X+Y represents carbonyl,

X.sub.1 represents hydrogen, hydroxy, alkoxy, mercapto or alkylthio, Y.sub.1 represents hydrogen, or X.sub.1+Y.sub.1 represents carbonyl,

R.sub.4, R.sub.5, and R.sub.6 are as defined in the description,

its isomers, and pharmaceutically-acceptable acid or base addition salts thereof, and medicinal products containing the same are useful in the treatment of cancer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 3 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2002:61254 USPATFULL
TITLE: Compositions and methods for the treatment of cancer
INVENTOR(S): Zeldis, Jerome B., Princeton, NJ, UNITED STATES
Zeitlin, Andrew L., Basking Ridge, NJ, UNITED STATES
Barer, Sol, Westfield, NJ, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2002035090	A1	20020321	
APPLICATION INFO.:	US 2001-853617	A1	20010514	(9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-204143P	20000515 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: PENNIE & EDMONDS LLP, 1667 K STREET NW, SUITE 1000, WASHINGTON, DC, 20006
NUMBER OF CLAIMS: 60
EXEMPLARY CLAIM: 1
LINE COUNT: 1973
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to compositions comprising thalidomide and another anti-cancer drug which can be used in the treatment or prevention of cancer. Preferred anti-cancer drugs are topoisomerase inhibitors. A particular composition comprises

thalidomide, or a pharmaceutically acceptable salt, solvate, or clathrate thereof, and irinotecan. The invention also relates to methods of treating or preventing cancer which comprise the administration of a thalidomide and another anti-cancer drug to a patient in need of such treatment or prevention. The invention further relates to methods of reducing or avoiding adverse side effects associated with the administration of chemotherapy or radiation therapy which comprise the administration of thalidomide to a patient in need of such reduction or avoidance.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 4 OF 17 USPATFULL on STN
ACCESSION NUMBER: 1999:78864 USPATFULL
TITLE: Antitumor indolopyrrolocarbazole derivatives
INVENTOR(S): Kojiri, Katsuhisa, Tsukuba, Japan
Kondo, Hisao, Tsukuba, Japan
Arakawa, Hiroharu, Tsukuba, Japan
Ohkubo, Mitsuru, Tsukuba, Japan
Suda, Hiroyuki, Tsukuba, Japan
PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5922860		19990713
APPLICATION INFO.:	US 1998-3602		19980107 (9)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 737382		

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1994-119483	19940509
	JP 1994-145648	19940603

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Raymond, Richard L.
ASSISTANT EXAMINER: Rao, Deepak R.
LEGAL REPRESENTATIVE: Sherman and Shalloway
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1
LINE COUNT: 1201
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to compounds of the general formula ##STR1## or pharmaceutically salts thereof, wherein R.sup.1 and R.sup.2 each represent an OH group, R.sup.1 is located at the 1- or 2-position, R.sup.2 is located at the 10- or 11-position, R.sup.2 is located at the 11-position when R.sup.1 is located at the 1-position, and R.sup.2 is located at the 10-position when R.sup.1 is located at the 2-position. The compounds of the present invention have an excellent antitumor effect and are hence useful as antitumor agents in the field of medicine.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 5 OF 17 USPATFULL on STN
ACCESSION NUMBER: 97:84095 USPATFULL
TITLE: Indolopyrrolocarbazole derivatives
INVENTOR(S): Kojiri, Katsuhisa, Tsukuba, Japan

Kondo, Hisao, Tsukuba, Japan
Arakawa, Hiroharu, Tsukuba, Japan
Ohkubo, Mitsuru, Tsukuba, Japan
Suda, Hiroyuki, Tsukuba, Japan
PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Tokyo, Japan
(non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5668271		19970916
APPLICATION INFO.:	US 1995-474659		19950607 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1994-255980, filed on 8 Jun 1994, now patented, Pat. No. US 5591842 which is a continuation-in-part of Ser. No. US 1992-981070, filed on 24 Nov 1992

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1991-341916	19911129
	JP 1992-69269	19920218
	JP 1992-257306	19920901

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Kight, John
ASSISTANT EXAMINER: Lee, Howard C.
LEGAL REPRESENTATIVE: Sherman and Shalloway
NUMBER OF CLAIMS: 3
EXEMPLARY CLAIM: 1
LINE COUNT: 2577
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Indolopyrrocarbazole derivatives represented by formula (I) and the pharmaceutically acceptable salts thereof have excellent antitumor activity as evidenced by their in vitro proliferation inhibiting activity against mouse leukemia cell, human gastric cancer cell, human lung cancer cell and human colon cancer cell, ##STR1## wherein R.sup.1 and R.sup.2 independently represent, for example, a hydrogen atom or various hydrocarbon groups which may be substituted or heterocyclic groups which may also be substituted; or a group --Y--R.sup.3 where Y represents a carbonyl group, thiocarbonyl group or sulfonyl group and R.sup.3 represents a hydrogen atom or one of various aliphatic, cycloaliphatic, aryl, nitrogen-containing (e.g. amino, hydrazino, etc) or heterocyclic groups, which groups may be substituted by various substituents; or R.sup.1 and R.sup.2 may combine to represent a lower alkylidene group which may be substituted; or R.sup.1 and R.sup.2, together with the N-atom to which they are bonded form a heterocyclic group which may be substituted;

G represents a pentose or hexose group; and X.sup.1 and X.sup.2, independently, represent, for example, hydrogen, halogen, amino, hydroxyl, alkoxy, aryloxy, carboxyl, alkoxycarbonyl or alkyl. These compounds have improved water solubility as compared to rebeccamycin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 6 OF 17 USPATFULL on STN
ACCESSION NUMBER: 97:56526 USPATFULL

TITLE: Microbial process for preparation of indolopyrrolocarbazole derivatives

INVENTOR(S): Kojiri, Katsuhisa, Tsukuba, Japan
Suzuki, Hajime, Tsukuba, Japan
Kondo, Hisao, Tsukuba, Japan
Suda, Hiroyuki, Tsukuba, Japan

PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5643760		19970701
APPLICATION INFO.:	US 1995-486640		19950607 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1993-166364, filed on 14 Dec 1993, now patented, Pat. No. US 5437996 which is a continuation-in-part of Ser. No. US 1993-68097, filed on 28 May 1993, now abandoned which is a continuation-in-part of Ser. No. US 1992-981070, filed on 24 Nov 1992, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1991-341916	19911129
	JP 1992-69269	19920218
	JP 1992-257306	19920901
	JP 1992-353623	19921214
	JP 1993-53035	19930218

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Marx, Irene
LEGAL REPRESENTATIVE: Sherman and Shalloway
NUMBER OF CLAIMS: 4
EXEMPLARY CLAIM: 1
LINE COUNT: 697
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Indolopyrrolocarbazole derivatives, such as, for example, 12,13-dihydro-1,11-dihydroxy-13-(.beta.-D-glucopyranosyl)-5H-indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7-(6H)-dione or 6-amino derivative thereof, are produced by glycosylating a precursor compound by cultivating with Microtetraspora sp. A34549, Saccharothrix aerocolonigenes ATCC 39243 or mutants thereof, in a nutrient medium containing the precursor compound.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 7 OF 17 USPATFULL on STN
ACCESSION NUMBER: 97:1561 USPATFULL
TITLE: Indolopyrrolocarbazole derivatives

INVENTOR(S): Kojiri, Katsuhisa, Tsukuba, Japan
Kondo, Hisao, Tsukuba, Japan
Arakawa, Hiroharu, Tsukuba, Japan
Ohkubo, Mitsuru, Tsukuba, Japan
Suda, Hiroyuki, Tsukuba, Japan

PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE

PATENT INFORMATION:	US 5591842	19970107
APPLICATION INFO.:	US 1994-255980	19940608 (8)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1993-166364, filed on 14 Dec 1993, now patented, Pat. No. US 5437996 which is a continuation-in-part of Ser. No. US 1993-68097, filed on 28 May 1993, now abandoned which is a continuation-in-part of Ser. No. US 1992-981070, filed on 24 Nov 1992	

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1991-341916	19911129
	JP 1992-69269	19920218
	JP 1992-257306	19920901

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Kight, John
ASSISTANT EXAMINER: Lee, Howard C.
LEGAL REPRESENTATIVE: Sherman and Shalloway
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
LINE COUNT: 2725
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Indolopyrrocarbazole derivatives such as exemplified by the following compound, ##STR1## have excellent antitumor activity as evidenced by in vitro proliferation inhibiting activity against mouse leukemia cell, human gastric cancer cell, human lung cancer cell and human colon cancer cell.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 8 OF 17 USPATFULL on STN

ACCESSION NUMBER:	96:120777 USPATFULL
TITLE:	Process for producing glycosylated indolopyrrolocarbazole derivatives by culturing certain microorganisms
INVENTOR(S):	Kojiri, Katsuhisa, Tsukuba, Japan Kondo, Hisao, Tsukuba, Japan Arakawa, Hiroharu, Tsukuba, Japan Ohkubo, Mitsuru, Tsukuba, Japan Suda, Hiroyuki, Tsukuba, Japan
PATENT ASSIGNEE(S):	Banyu Pharmaceutical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5589365		19961231
APPLICATION INFO.:	US 1995-381286		19950131 (8)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 1993-68097, filed on 28 May 1993, now abandoned which is a continuation-in-part of Ser. No. US 1992-981070, filed on 24 Nov 1992		

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1991-341916	19911129
	JP 1992-257306	19920109
	JP 1992-69269	19920218

JP 1992-353623 19921214
JP 1993-53035 19930218
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Marx, Irene
LEGAL REPRESENTATIVE: Sherman and Shalloway
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
LINE COUNT: 2232
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A compound of formula (VIII) ##STR1## is added to a culture media containing Microtetraspora sp. A34549 or Saccharothrix aerocolonigenes ATCC 39243. The compound is glycosylated to form an indolopyrrolocarbazole of formula (VII) ##STR2##

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 9 OF 17 USPATFULL on STN
ACCESSION NUMBER: 96:19082 USPATFULL
TITLE: Stable solutions of rebeccamycin analog
INVENTOR(S): Venkataram, Ubrani V., Fayetteville, NY, United States
Franchini, Miriam K., Syracuse, NY, United States
Bogardus, Joseph B., Manlius, NY, United States
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5496809		19960305	
APPLICATION INFO.:	US 1989-349608		19890510	(7)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Robinson, Douglas W.
ASSISTANT EXAMINER: Kunz, Gary L.
LEGAL REPRESENTATIVE: Nolan, Sandra M.
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
LINE COUNT: 378
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Stable solutions of rebeccamycin analog consist essentially of (a) water, (b) 8-N-(diethylaminoethyl)rebeccamycin in an effective dosage amount, and (c) pharmaceutically acceptable acid such that the presence of a molar equivalence thereof would solubilize (b), said acid being present in excess of said molar equivalence to provide a stabilizing pH ranging from 3 to 4, preferably from 3.0 to 3.6. A preferred solution contains 10 mg/ml of the free base and tartaric acid in equimolar amount with the free base to provide a pH of 3.5. Preferably, the solution is prepared by forming a suspension of 8-N-(diethylaminoethyl)rebeccamycin in water and adding acid to provide a pH ranging from 3 to 4.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 10 OF 17 USPATFULL on STN
ACCESSION NUMBER: 95:103611 USPATFULL
TITLE: Rebeccamycin analogs by tryptophan analogs feeding

INVENTOR(S): Lam, Kin S., Cheshire, CT, United States
Schroeder, Daniel R., Higganum, CT, United States
Mattei, Jacqueline, Branford, CT, United States
Forenza, Salvatore, Cheshire, CT, United States
Matson, James A., Cheshire, CT, United States
PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5468849		19951121
APPLICATION INFO.:	US 1994-216075		19940321 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-60951, filed on 13 May 1993, now abandoned which is a continuation of Ser. No. US 1991-648751, filed on 5 Feb 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-489430, filed on 6 Mar 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Fox, David T.
ASSISTANT EXAMINER: Lee, Howard C.
LEGAL REPRESENTATIVE: Kaye, Michelle A., DuBoff, Samuel J.
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 15 Drawing Figure(s); 15 Drawing Page(s)
LINE COUNT: 621
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Addition of certain tryptophan analogs to the culture medium during fermentation of a rebeccamycin-producing strain of Saccharothrix aerocolonigenes results in production of new rebeccamycin analogs having advantageous antitumor properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 11 OF 17 USPATFULL on STN
ACCESSION NUMBER: 92:89049 USPATFULL
TITLE: Rebeccamycin
INVENTOR(S): Lam, Kin S., Cheshire, CT, United States
Schroeder, Daniel R., Higganum, CT, United States
Mattei, Jacqueline, Branford, CT, United States
Matson, James A., Chesire, CT, United States
Forenza, Salvatore, Chesire, CT, United States
PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5158938		19921027
APPLICATION INFO.:	US 1991-764116		19910923 (7)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1990-488915, filed on 6 Mar 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Brown, Johnnie R.
ASSISTANT EXAMINER: Wilson, J. Oliver
LEGAL REPRESENTATIVE: Cepeda-Kaye, Michelle A.
NUMBER OF CLAIMS: 5

EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 392
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Addition of bromine to the culture medium during fermentation of a rebeccamycin-producing strain of Saccharothrix aerocolonigenes results in production of a new rebeccamycin derivative having advantageous antineoplastic properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 12 OF 17 USPATFULL on STN
ACCESSION NUMBER: 89:15075 USPATFULL
TITLE: Rebeccamycin derivative containing pharmaceutical composition
INVENTOR(S): Kaneko, Takushi, Guilford, CT, United States
Wong, Henry S., Durham, CT, United States
Utzig, Jacob J., Buffalo, NY, United States
PATENT ASSIGNEE(S): Bristol-Myers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4808613		19890228
APPLICATION INFO.:	US 1988-169785		19880318 (7)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1986-933428, filed on 21 Nov 1986, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Griffin, Ronald W.
ASSISTANT EXAMINER: Crane, L. Eric
LEGAL REPRESENTATIVE: Morse, David M.
NUMBER OF CLAIMS: 1
EXEMPLARY CLAIM: 1
LINE COUNT: 490
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB There are disclosed analogs of the antitumor agent, rebaccamycin, which possess antineoplastic properties against mammalian, particularly experimental animal, tumor systems. The compounds of the invention are aminoalkylated derivatives of rebeccamycin produced by first reacting rebeccamycin with a strong base to obtain a reactive intermediate and then reacting the reactive intermediate with an aminoalkyl compound.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 13 OF 17 USPATFULL on STN
ACCESSION NUMBER: 88:74145 USPATFULL
TITLE: Rebeccamycin analogs
INVENTOR(S): Kaneko, Takushi, Guilford, CT, United States
Wong, Henry S., Durham, CT, United States
Utzig, Jacob J., Buffalo, NY, United States
PATENT ASSIGNEE(S): Bristol-Myers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4785085		19881115

APPLICATION INFO.: US 1986-933428 19861121 (6)
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Griffin, Ronald W.
ASSISTANT EXAMINER: Crane, L. Eric
LEGAL REPRESENTATIVE: Morse, David M.
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
LINE COUNT: 562
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB There are disclosed analogs of the antitumor agent, rebeccamycin, which possess antineoplastic properties against mammalian, particularly experimental animal, tumor systems. The compounds of the invention are aminoalkylated derivatives of rebeccamycin produced by first reacting rebeccamycin with a strong base to obtain a reactive intermediate and then reacting the reactive intermediate with an aminoalkyl compound.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 14 OF 17 USPATFULL on STN
ACCESSION NUMBER: 86:4983 USPATFULL
TITLE: Process for preparing 4'-deschlororebeccamycin
INVENTOR(S): Matson, James A., Fayetteville, NY, United States
PATENT ASSIGNEE(S): Bristol-Myers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4567143		19860128
APPLICATION INFO.:	US 1985-690271		19850318 (6)

RELATED APPLN. INFO.: Division of Ser. No. US 1984-646673, filed on 4 Sep 1984, now patented, Pat. No. US 4524145
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Tanenholtz, Alvin E.
ASSISTANT EXAMINER: Weimar, Elizabeth C.
LEGAL REPRESENTATIVE: Morse, David M.
NUMBER OF CLAIMS: 1
EXEMPLARY CLAIM: 1
LINE COUNT: 628
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A new antitumor antibiotic designated herein as 4'-deschlororebeccamycin is produced by fermentation of Nocardia aerocolonigenes ATCC 39243. The new compound possesses antibacterial activity and inhibits the growth of tumors in experimental animals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 15 OF 17 USPATFULL on STN
ACCESSION NUMBER: 85:66802 USPATFULL
TITLE: Process for producing rebeccamycin
INVENTOR(S): Nettleton, Jr., Donald E., Jordan, NY, United States
Bush, James A., Fayetteville, NY, United States
Bradner, William T., Manlius, NY, United States
Doyle, Terrence W., Fayetteville, NY, United

States
PATENT ASSIGNEE(S): Bristol-Myers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4552842		19851112
APPLICATION INFO.:	US 1984-599918		19840413 (6)

RELATED APPLN. INFO.: Division of Ser. No. US 1983-461817, filed on 28 Jan 1983, now patented, Pat. No. US 4487925, issued on 11 Dec 1984
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Shapiro, Lionel M.
LEGAL REPRESENTATIVE: Morse, David M.
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1
LINE COUNT: 568
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel antitumor agent designated herein as rebeccamycin is produced by fermentation of Nocardia aerocolonigenes (ATCC 39243). Rebeccamycin and its 5'-N-methyl and 5',2",3",6"-tetraacetate derivatives exhibit activity against experimental animal tumor systems.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 16 OF 17 USPATFULL on STN
ACCESSION NUMBER: 85:35892 USPATFULL
TITLE: 4'-Deschlororebeccamycin pharmaceutical composition and method of use
INVENTOR(S): Matson, James A., Fayetteville, NY, United States
PATENT ASSIGNEE(S): Bristol-Myers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4524145		19850618
APPLICATION INFO.:	US 1984-646673		19840904 (6)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Brown, Johnnie R.
LEGAL REPRESENTATIVE: Morse, David M.
NUMBER OF CLAIMS: 3
EXEMPLARY CLAIM: 3
LINE COUNT: 627
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A new antitumor antibiotic designated herein as 4'-deschlororebeccamycin is produced by fermentation of Nocardia aerocolonigenes ATCC 39243. The new compound possesses antibacterial activity and inhibits the growth of tumors in experimental animals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 17 OF 17 USPATFULL on STN
ACCESSION NUMBER: 84:69188 USPATFULL
TITLE: Rebeccamycin and process for its preparation

INVENTOR(S): Nettleton, Jr., Donald E., Jordan, NY, United States
Bush, James A., Fayetteville, NY, United States
Bradner, William T., Manlius, NY, United States
Doyle, Terrence W., Fayetteville, NY, United States
PATENT ASSIGNEE(S): Bristol-Myers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 4487925		19841211	
APPLICATION INFO.:	US 1983-461817		19830128	(6)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Love, Ethel G.
LEGAL REPRESENTATIVE: Morse, David M.
NUMBER OF CLAIMS: 3
EXEMPLARY CLAIM: 1,2,3
LINE COUNT: 558

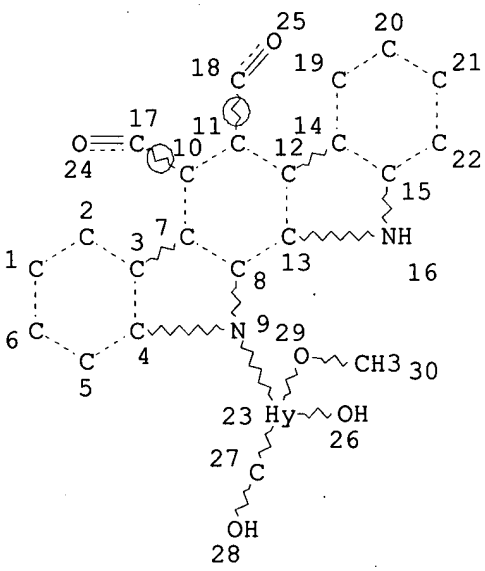
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel antitumor agent designated herein as rebeccamycin is produced by fermentation of Nocardia aerocolonigenes (ATCC 39243). Rebeccamycin and its 5'-N-methyl and 5',2",3",6"-tetraacetate derivatives exhibit activity against experimental animal tumor systems.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

(FILE 'MARPAT' ENTERED AT 15:47:03 ON 09 SEP 2003)

L11 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
MLEVEL IS CLASS AT 23
GGCAT IS SAT AT 23
DEFAULT ECLEVEL IS LIMITED

ECOUNT IS E1 O AT 23

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

ATTRIBUTES SPECIFIED AT SEARCH-TIME:
ECLEVEL IS LIM ON ALL NODES
ALL RING(S) ARE ISOLATED

L13 8 SEA FILE=MARPAT SSS FUL L11 (MODIFIED ATTRIBUTES)

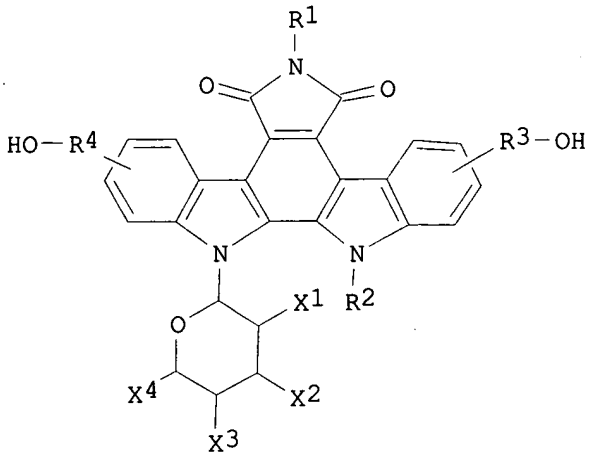
100.0% PROCESSED 2193 ITERATIONS (3 INCOMPLETE) 8 ANSWERS
SEARCH TIME: 00.00.14

L13 ANSWER 1 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 138:338405 MARPAT
TITLE: Preparation of hydroxyalkyl-indolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors
INVENTOR(S): Prudhomme, Michelle; Marminon, Christelle; Moreau, Pascale; Hickman, John; Pierre, Alain; Pfeiffer, Bruno; Renard, Pierre; Bizot, Espiard Jean Guy
PATENT ASSIGNEE(S): Les Laboratoires Servier, Fr.
SOURCE: Fr. Demande, 28 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2831169	A1	20030425	FR 2001-13576	20011022
WO 2003035663	A1	20030501	WO 2002-FR3592	20021021

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR

PRIORITY APPLN. INFO.: FR 2001-13576 20011022
GI



I

AB Hydroxyalkyl-indolocarbazole glycosides I, wherein R1 and R2 are independently hydrogen, alkyl, arylalkyl, hydroxy, hydroxyalkyl, dihydroxyalkyl, alkoxy, alkoxyalkyl, amino and aminoalkyl (being possibly substituted); R3 and R4 are independently alkylidene; X1-X3 are independently OH, alkoxy, aryloxy, arylalkoxy, alkyl, amino (possibly substituted), halogen, alkylcarbonyloxy and azido; X4 is methylidene or CH2X1, their isomers like their additive salts to an acid or a pharmaceutically acceptable base. Thus, 3,9-bis(hydroxymethyl)-12-(4-O-methyl-.beta.-D-glucopyranosyl)-12,13-dihydro-5H-indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione was prepd. as antidiabetic, anti-Alzheimer's, anti-Parkinson's, glycogen synthase kinase inhibitor agent, and for the treatment of apoptosis of normal cells due to antitumor treatment.

IC ICM C07H019-23
ICS A61K031-7056; A61P025-00; A61P035-00

CC 33-7 (Carbohydrates)
Section cross-reference(s): 1, 27, 63

ST hydroxyalkylindolocarbazole glycoside prepn antidiabetic glycogen synthase kinase inhibitor human

IT Alzheimer's disease
Anti-Alzheimer's agents
Antidiabetic agents
Antiparkinsonian agents
Antitumor agents
Apoptosis
Diabetes insipidus
Diabetes mellitus
Human
Neoplasm
Parkinson's disease
(prepn. of hydroxyalkylindolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors)

IT Glycosides
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of hydroxyalkylindolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors)

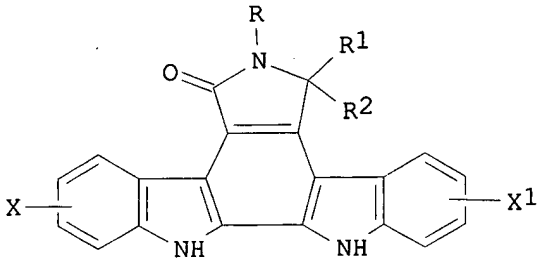
IT 9059-09-0, Glycogen Synthase kinase 143375-65-9, Cyclin-dependent kinase 1
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(prepn. of hydroxyalkylindolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors)
IT 515132-15-7P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of hydroxyalkylindolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors)
IT 4885-02-3, .alpha.,.alpha.,-Dichloromethyl methyl ether 205386-72-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of hydroxyalkylindolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors)
IT 156330-65-3P 515132-13-5P 515132-14-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of hydroxyalkylindolocarbazole glycosides as antidiabetics and glycogen synthase kinase inhibitors)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 138:221787 MARPAT
TITLE: Process for the preparation of rebeccamycin glycosides and analogs via oxidative ring closure reaction
INVENTOR(S): Wang, Jianji
PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, USA
SOURCE: PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

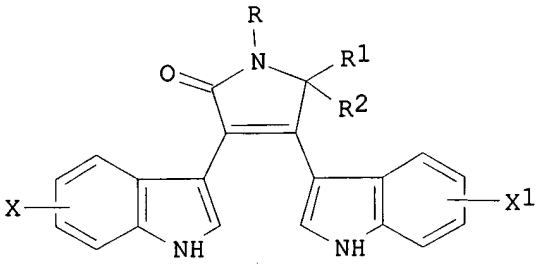
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003022861	A1	20030320	WO 2002-US29374	20020913

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-318719P 20010913
OTHER SOURCE(S): CASREACT 138:221787
GI



I



II

AB The present invention relates to a method for making an indolopyrrolocarbazole compd. of the general formula I, wherein X and X1 are at each of the 1-4 and 8-11 positions, independently H, OH, halogen, CN, CF2, acyl, NO2, ether, aminoalkoxy; R is H, alkyl, aryl, arylalkyl, ether, amine, ester; R1 and R2 are independently H, OH; R1R2 is O; where the method includes the step of reacting a bisindolylmaleimide compd. II with an oxidizing agent in the presence of an oxygen contg. gas at a temp. and for a time sufficient. Methods of making rebeccamycin analogs, e.g. I (X = 3-F, X1 = 9-F, R = p-tert-butylbenzyl, R1R2 = O), using the indolopyrrolocarbazole compd. are also provided via oxidative ring closure of II (X = 3-F, X1 = 9-F, R = p-tert-butylbenzyl, R1R2 = O).

IC ICM C07H019-00
ICS C07H019-22; C07H005-04; C07H005-06; C07C045-00
CC 33-7 (Carbohydrates)
Section cross-reference(s): 25
ST indolopyrrolocarbazole glycoside rebeccamycin prepn oxidative ring closure

IT Cyclization
(oxidative; process for prepn. of rebeccamycin glycosides and analogs via oxidative ring closure reaction)

IT Glycosides
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(process for prepn. of rebeccamycin glycosides and analogs via oxidative ring closure reaction)

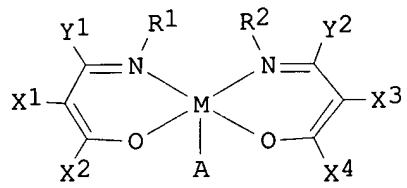
IT 204194-33-2P 406913-72-2P 463303-06-2P 463303-08-4P 500894-41-7P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(process for prepn. of rebeccamycin glycosides and analogs via

oxidative ring closure reaction)
IT 204194-31-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for prepn. of rebeccamycin glycosides and analogs via oxidative ring closure reaction)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

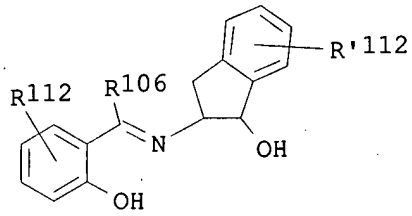
L13 ANSWER 3 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
(ALL HITs ARE ITERATION INCOMPLETES)
ACCESSION NUMBER: 131:350871 MARPAT
TITLE: Chiral non-racemic catalysts containing Main-group metals and tridentate or tetradentate ligands for asymmetric nucleophilic addition reactions to .pi. bonds
INVENTOR(S): Jacobsen, Eric N.; Sigman, Matthew S.
PATENT ASSIGNEE(S): President and Fellows of Harvard College, USA
SOURCE: PCT Int. Appl., 90 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9956699	A2	19991111	WO 1999-US9570	19990430
WO 9956699	A3	20000518		
W: CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6521561	B1	20030218	US 1998-71842	19980501
CA 2329316	AA	19991111	CA 1999-2329316	19990430
EP 1073613	A2	20010207	EP 1999-922765	19990430
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002513734	T2	20020514	JP 2000-546729	19990430
PRIORITY APPLN. INFO.:			US 1998-71842	19980501
			WO 1999-US9570	19990430

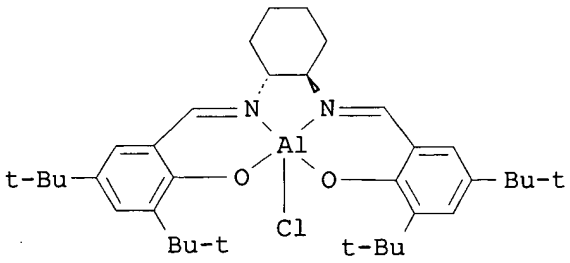
GI



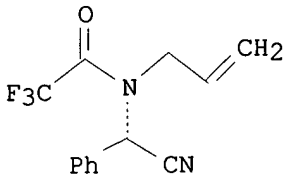
I



II



III



IV

AB The present invention relates to a method and catalysts for the stereoselective addn. of a nucleophile to a reactive .pi.-bond of a substrate. Claimed is a stereoselective nucleophilic addn. reaction of a .pi.-bond-contg. substrate with a nucleophile in the presence of a chiral, non-racemic catalyst to produce a stereoisomerically enriched addn. product. The substrate comprises a C-C or C-heteroatom .pi.-bond, and the nucleophile comprises at least one pair of Lewis basic electrons. The chiral, non-racemic catalysts of the invention constitute the first examples of catalysts for nucleophilic addns. that comprise a Main-group metal and a tri- or tetradentate ligand. One of a no. of preferred chiral non-racemic catalysts of the invention includes metallosalenates I (R1, R2, Y1, Y2, X1-X4 = H, halo, alkyl, alkenyl, alkynyl, OH, alkoxy, siloxy, amino, nitro, SH, amines, imines, amides, phosphonates, phosphines, carbonyls, carboxyls, silyls, ethers, thioethers, sulfonyls, selenoethers, ketones, aldehydes, esters, etc., or any two or more taken together form a 4-8 membered carbocycle or heterocycle which may be a fused ring, with a proviso that requires the .beta.-iminocarbonyls as tetradentate ligand). Other preferred chiral non-racemic catalysts of the invention include various metalloporphyrinates or porphyrin-like complexes, complexes of the tridentate chiral Schiff base ligand II (R106 = H, halo, alkyl, etc.; each R112, R'112 is absent or represents one or more covalent substitutions of the heterocycle to which it is attached), or complexes of various tetradentate azamacrocycles. Catalysts may contain a Main-group metal selected from Groups 1, 2, 12, 13, or 14 of the periodic table. The catalyst may be immobilized on an insol. matrix. The nucleophilic addn. reaction may be enantioselective, diastereoselective, or a diastereoselective reaction which is a kinetic resoln. The .pi.-bond-contg. substrate may include, e.g., aldehydes, conjugated enals, thioaldehydes, conjugated thioenals,

selenoaldehydes, conjugated selenoenals, ketones, conjugated enones, thioketones, conjugated thioenones, selenoketones, conjugated selenoenones, imines, oximes, hydrazones, glyoxylates, pyruvates, conjugated enoates, .alpha.,.beta.-unsatd. amides, .alpha.,.beta.-unsatd. imides, lactones, thionolactones, thiolactones, dithiolactones, lactams, and thiolactams. The reacting nucleophiles may include conjugate bases of weak Bronsted acids, e.g., cyanide, azide, isocyanate, thiocyanate, alkoxide, thioalkoxide, carboxylate, thiocarboxylate, and carbanions. A highly enantioselective hydrocyanation reaction is achieved by this method. Treatment of N-allylbenzaldimine with HCN in the presence of chiral (salen)Al(III) complex III (toluene, -70.degree., 15 h) followed by workup with TFAA affords (S)-(+)-trifluoroacetamide IV in 91% yield, 95% ee. The asym. Strecker-type reaction catalyzed by III provides a straightforward entry into enantiomerically enriched .alpha.-amino acid derivs. Also claimed are chiral catalysts comprising a main-group metal atom or ion, and an asym. tetradentate or tridentate ligand wherein the catalyst catalyzes at least one asym. reaction. The asym. reactions may comprise epoxidn., aziridination, cycloaddn., sigmatropic rearrangement, addn. of nucleophiles to .pi. bonds, ring-opening reactions, hetero-Diels-Alder or hetero-ene reactions, Claisen rearrangements, carbonyl redns., and addn. of nucleophiles to carbonyl groups or to C:N .pi. bonds.

IC ICM A61K

CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 34

ST stereoselective nucleophilic addn catalyst Main group metal chelate; pi bond stereoselective addn nucleophile; salen aluminum catalyst enantioselective hydrocyanation imine; metalloporphyrin Main group metal catalyst stereoselective nucleophile addn; azamacrocycle Main group metal catalyst stereoselective nucleophile addn; amino acid enantioselective prepn aluminum salen catalyst; asym reaction catalyst Main group metal complex; chiral catalyst Main group metal complex; Group IIB metal complex chiral catalyst

IT Metalloporphyrins
RL: CAT (Catalyst use); USES (Uses)
(Main group metal; chiral, non-racemic Main-group metal and Group IIB metal-based porphyrinate catalysts for stereoselective nucleophilic addn. reactions of .pi.-bonds)

IT Asymmetric synthesis and induction
Catalysts
(chiral catalysts comprising main-group metal and asym. tetradentate or tridentate ligand for asym. reactions)

IT Addition reaction catalysts
(chiral, non-racemic Main-group metal and Group IIB metal-based catalysts for stereoselective nucleophilic addn. reactions of .pi.-bonds)

IT Group IIB element complexes
RL: CAT (Catalyst use); USES (Uses)
(chiral, non-racemic Main-group metal and Group IIB metal-based catalysts for stereoselective nucleophilic addn. reactions of .pi.-bonds)

IT Main group element compounds
RL: CAT (Catalyst use); USES (Uses)
(complexes; chiral, non-racemic Main-group metal and Group IIB metal-based catalysts for stereoselective nucleophilic addn. reactions of .pi.-bonds)

IT Addition reaction
(nucleophilic, stereoselective; of .pi.-bonds catalyzed by chiral, non-racemic Main-group metal and Group IIB metal-based catalysts)
IT Amino acids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of enantiomerically enriched .alpha.-amino acids via catalytic asym. hydrocyanation of imines)
IT Pi bond
(stereoselective nucleophilic addn. reactions of .pi.-bonds catalyzed by chiral, non-racemic Main-group metal and Group IIB metal-based catalysts)
IT Hydrocyanation
(stereoselective, stereoselective; Strecker-type, of imines catalyzed by chiral, non-racemic Main-group metal and Group IIB metal-based catalysts)
IT Hydrocyanation catalysts
(stereoselective; chiral, non-racemic Main-group metal and Group IIB metal-based catalysts for asym. Strecker-type reaction of imines with cyanide)
IT 164931-83-3 176763-62-5 176763-69-2 201870-82-8
RL: CAT (Catalyst use); USES (Uses)
(catalyst for addn. of trimethylsilyl cyanide to imine)
IT 250376-62-6
RL: CAT (Catalyst use); USES (Uses)
(catalyst for enantioselective addn. of azide to N-ethylmaleimide)
IT 250611-18-8
RL: CAT (Catalyst use); USES (Uses)
(catalyst for enantioselective addn. of azide to conjugated amide)
IT 138124-32-0 203944-13-2 250611-13-3
RL: CAT (Catalyst use); USES (Uses)
(catalyst for enantioselective addn. of trimethylsilyl cyanide to imine)
IT 37942-07-7, 3,5-Di-tert-butylsalicylaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with chiral diaminocyclohexane)
IT 138937-07-2, 3-(Diphenylmethylsilyl)salicylaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with chiral diaminodiphenylethane)
IT 24623-65-2, 3-tert-Butylsalicylaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with chiral diaminodiphenylethane or diaminobinaphthyl)
IT 21436-03-3, (S,S)-1,2-Diaminocyclohexane
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with di-tert-butylsalicylaldehyde)
IT 35132-20-8, (R,R)-1,2-Diamino-1,2-diphenylethane
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with salicylaldehydes)
IT 18741-85-0, (+)-2,2'-Diamino-1,1'-binaphthyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with tert-butylsalicylaldehyde)
IT 90-02-8, Salicylaldehyde, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation with pyrrole to give tetrakis(hydroxyphenyl)porphyrin)

IT 109-97-7, Pyrrole
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation with salicylaldehyde to give tetrakis(hydroxyphenyl)porphyrin)
IT 128-53-0, N-Ethylmaleimide
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective addn. of azide catalyzed by aluminum salen azido complex)
IT 173909-83-6 247043-63-6 247043-65-8 247043-66-9 250376-84-2
250376-85-3 250376-86-4 250376-87-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective addn. of azide catalyzed by chiral non-racemic aluminum salen complex)
IT 7782-79-8, Hydrogen azide
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective addn. of azide to conjugated amide catalyzed by chiral non-racemic aluminum salen complex)
IT 183864-20-2 246509-60-4 246509-61-5 246509-62-6 246509-63-7
246509-64-8 250376-64-8 250376-67-1 250376-68-2 250376-69-3
250376-70-6 250376-71-7 250376-72-8 250376-73-9 250376-74-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective addn. of trimethylsilyl cyanide catalyzed by chiral non-racemic aluminum salen complex)
IT 7677-24-9, Trimethylsilyl cyanide
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective addn. to imine catalyzed by Main group metal salen complex)
IT 68003-54-3 68003-55-4, (E)-N-Allylbenzaldimine 87869-49-6
87869-50-9 156697-64-2 156697-65-3 183864-17-7 200490-91-1
246509-58-0 246509-59-1 250376-55-7 250376-56-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective hydrocyanation catalyzed by aluminum salen complex)
IT 207234-73-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(enantioselective prepn. and hydrolysis of)
IT 207121-85-5P 207121-86-6P 207121-87-7P 207121-88-8P
207121-89-9P 207234-64-8P 207234-65-9P 207234-66-0P
207234-67-1P 207234-70-6P 207234-71-7P 207234-72-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(enantioselective prepn. by hydrocyanation of imine catalyzed with aluminum salen complex)
IT 246509-70-6P 246509-71-7P 246509-72-8P 246509-73-9P
246509-74-0P 246509-75-1P 247043-56-7P 247043-69-2P
247043-70-5P 247043-71-6P 247043-72-7P 247043-73-8P
247043-74-9P 247043-75-0P 247043-77-2P 250376-75-1P
250376-76-2P 250376-77-3P 250376-78-4P 250376-79-5P
250376-80-8P 250376-81-9P 250376-82-0P 250376-83-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(enantioselective prepn. of)
IT 74-90-8, Hydrogen cyanide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(for enantioselective hydrocyanation of imine catalyzed by aluminum salen complex)
IT 25186-28-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

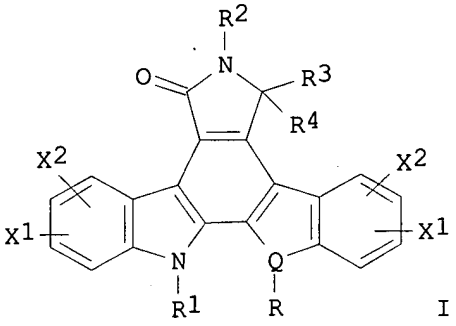
(prepn. and reaction with D-threitol ditosylate)
IT 25186-28-1DP, chiral reaction product with D-threitol 1,4-ditosylate
50623-73-9DP, chiral reaction product with
tetrakis(hydroxyphenyl)porphyrin 135616-36-3P 138937-08-3P
138937-09-4P 139014-53-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. as ligand for chiral non-racemic Main-group metal-contg. catalyst for stereoselective nucleophilic addn. reactions to .pi. bonds)
IT 207121-83-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. by hydrocyanation of imine catalyzed with transition metal salen complex)
IT 207234-74-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 50623-73-9, D-Threitol 1,4-ditosylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with tetrakis(hydroxyphenyl)porphyrin)

L13 ANSWER 4 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 128:217590 MARPAT
TITLE: Preparation of amino sugar and related sugar derivatives of indolopyrrolocarbazoles as antitumors
INVENTOR(S): Saulnier, Mark George; Balasubramanian, Neelakantan; Frennesson, David Bertil; St. Laurent Denis R.; Langley, David R.
PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, USA
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9807433	A1	19980226	WO 1997-US14738	19970821
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9741558	A1	19980306	AU 1997-41558	19970821
AU 710669	B2	19990923		
BR 9711306	A	19990817	BR 1997-11306	19970821
CN 1228704	A	19990915	CN 1997-197437	19970821
CN 1097460	B	20030101		
EP 971717	A1	20000119	EP 1997-939482	19970821
EP 971717	B1	20011219		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2000516250	T2	20001205	JP 1998-510975	19970821
RU 2167880	C2	20010527	RU 1999-105751	19970821

AT 210988	E	20020115	AT 1997-939482	19970821
ES 2169414	T3	20020701	ES 1997-939482	19970821
NO 9900789	A	19990219	NO 1999-789	19990219
HK 1024177	A1	20020719	HK 2000-103550	20000613
PRIORITY APPLN. INFO.:			US 1996-24657P	19960822
			WO 1997-US14738	19970821

GI



I

AB Title compds. I (R, R1 = independently H, substituted furan or pyran sugar deriv.; R2 = H, alkyl, aryl, arylalkyl, alkoxy, amine, aminoalkyl ester; R3, R4 = independently OH, H; R3R4 = O; X1, X2 = independently H, halogen, OH, CN, NC, CF3, acyl, NO2, aminoalkoxy, alkoxy; Q = O, N S, CH2), some of which are topoisomerase I active agents were prepd. These compds. were useful in inhibiting proliferation of antitumor cells and antitumor effects. Thus, I (R = H; R1 = 6-amino-6-deoxy-.beta.-D-glucopyranosyl; X1 = H; X2 = F at positions 3 and 9; Q = N) was prepd. with in-vitro cell based cytotoxicity activity IC50(.mu.M = 0.11) and topoisomerase I activity EC50(.mu.M = 0.03).

IC ICM A61K031-70
ICS C07H017-02

CC 33-9 (Carbohydrates)
Section cross-reference(s): 1, 63

ST cytotoxicity proliferation inhibitor indolopyrrolocarbazole nucleoside analog; indolopyrrolocarbazole nucleoside analog prepn antitumor

IT Antitumor agents
Cytotoxic agents
Cytotoxicity
(prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

IT Nucleoside analogs
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

IT Proliferation inhibition
(proliferation inhibitors; prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

IT 399-51-9P, 6-Fluoroindole 1122-10-7P, 3,4-Dibromomaleimide

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

IT 96631-90-2P 138829-47-7P 152628-10-9P 152628-19-8P
204194-28-5P 204194-30-9P 204194-32-1P 204194-41-2P
204194-42-3P 204194-43-4P 204194-44-5P 204194-45-6P
204194-46-7P 204194-48-9P 204194-54-7P 204194-61-6P
204194-62-7P 204194-63-8P 204194-64-9P 204194-65-0P
204194-66-1P 204194-67-2P 204194-71-8P 204194-72-9P
204194-73-0P 204194-74-1P 204194-75-2P 204194-76-3P
204194-77-4P 204194-78-5P 204194-79-6P 204194-80-9P
204194-81-0P 204194-82-1P 204194-83-2P 204194-84-3P
204194-85-4P 204194-86-5P 204194-87-6P 204194-91-2P
204194-93-4P 204194-94-5P 204194-96-7P 204194-98-9P
204194-99-0P 204195-05-1P 204195-12-0P 204195-14-2P
204195-16-4P 204195-19-7P 204195-25-5P 204195-26-6P
204195-28-8P 204195-29-9P 204195-30-2P 204195-33-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

IT 75-07-0, Acetaldehyde, reactions 84-58-2 95-15-8, Thianaphthene 107-15-3, 1,2-Ethanediamine, reactions 110-91-8, Morpholine, reactions 124-63-0, Methanesulfonyl chloride 288-32-4, Imidazole, reactions 399-52-0, 5-Fluoroindole 446-10-6, 4-Fluoro-2-nitrotoluene 541-59-3, 1H-Pyrrole-2,5-dione 823-85-8, 4-Fluorophenylhydrazine hydrochloride 1005-56-7, Phenyl chlorothionoformate 1074-82-4, Potassium phthalimide 1123-61-1 5470-11-1, Hydroxylamine hydrochloride 7087-68-5, N,N-Diisopropylethylamine 18880-00-7, 4-(tert-Butyl)benzyl bromide 25320-59-6 38768-81-9 55628-54-1 69739-34-0, tert-Butyldimethylsilyl trifluoromethanesulfonate 74372-90-0 87413-09-0, Dess-Martin periodinane 138829-46-6 204194-52-5 204194-69-4 204194-70-7 204194-88-7 204195-03-9 204195-07-3 204195-09-5 204195-18-6 204195-27-7 204195-37-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

IT 22720-75-8P 25508-20-7P, N,N'-Bis(benzyloxycarbonyl)-S-methylisothiourea 51868-95-2P 186420-00-8P 204194-29-6P
204194-31-0P 204194-33-2P 204194-34-3P 204194-35-4P
204194-36-5P 204194-37-6P 204194-38-7P 204194-47-8P
204194-49-0P 204194-50-3P 204194-51-4P 204194-53-6P
204194-55-8P 204194-56-9P 204194-57-0P 204194-58-1P
204194-59-2P 204194-60-5P 204194-68-3P 204194-89-8P
204194-90-1P 204195-00-6P 204195-01-7P 204195-02-8P
204195-04-0P 204195-06-2P 204195-21-1P 204195-23-3P
204195-31-3P 204195-32-4P 204195-34-6P 204195-35-7P
204195-36-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of amino sugar and related sugar derivs. of indolopyrrolocarbazoles as antitumors)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
(ALL HITs ARE ITERATION INCOMPLETES)
ACCESSION NUMBER: 125:127644 MARPAT
TITLE: Method for obtaining improved image contrast in migration imaging members
INVENTOR(S): Limburg, William W.; Mammino, Joseph; Liebermann, George; Griffiths, Clifford H.; Shahin, Michael M.; Malhotra, Shadi L.; Chen, Liqin; Perron, Marie-Eve
PATENT ASSIGNEE(S): Xerox Corp., USA
SOURCE: U.S., 147 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5514505	A	19960507	US 1995-441360	19950515
CA 2169980	AA	19961116	CA 1996-2169980	19960221
CA 2169980	C	20010424		
JP 08314240	A2	19961129	JP 1996-113456	19960508
EP 743573	A2	19961120	EP 1996-303359	19960514
EP 743573	A3	19970305		
EP 743573	B1	20000906		
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			US 1995-441360	19950515

AB Disclosed is a process which comprises (a) providing a migration imaging member comprising (1) a substrate and (2) a softenable layer comprising a softenable material and a photosensitive migration marking material present in the softenable layer as a monolayer of particles situated at or near the surface of the softenable layer spaced from the substrate, (b) uniformly charging the imaging member, (c) imagewise exposing the charged imaging member to activating radiation at a wavelength to which the migration marking material is sensitive, (d) causing the softenable material to soften and enabling a first portion of the migration marking material to migrate through the softenable material toward the substrate in an imagewise pattern while a second portion of the migration marking material remains substantially unmigrated within the softenable layer, and (e) contacting the second portion of the migration marking material with a transparentizing agent which transparentizes the migration marking material.

IC ICM G03G017-10
NCL 430041000
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST electrophotog migration imaging transparentizing agent
IT Electrophotography
(migration imaging process)
IT Electrophotographic photoconductors and photoreceptors
(transparentizing agents for migration imaging)
IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered

material use); USES (Uses)
((hydrogenated tallow alkyl)trimethyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Imidazolium compounds
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(4,5-dihydro-1-methyl-2-nortallow alkyl-1-(2-tallow amidoethyl), Me sulfates, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(benzyl(hydrogenated tallow alkyl)dimethyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(benzylbis(hydrogenated tallow alkyl)methyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(benzylcoco alkyldimethyl, chlorides, Merpiquat K 8-2; transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(benzyldimethyltallow alkyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(bis(hydrogenated tallow alkyl)dimethyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(coco alkyltrimethyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(di-C18-22-alkyldimethyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(dicoco alkyldimethyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(dimethylditallow alkyl, chlorides, transparentizing agent for

electrophotog. migration imaging members)

IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(trimethylsoya alkyl, chlorides, transparentizing agent for electrophotog. migration imaging members)

IT 50-44-2, 6-Mercaptopurine 50-89-5, Thymidine, uses 51-17-2, Benzimidazole 51-35-4, 4-Hydroxyproline 51-45-6, Histamine, uses 54-16-0, 5-Hydroxyindole-3-acetic acid, uses 54-77-3 54-95-5, 1,5-Pentamethylenetetrazole 55-22-1, Isonicotinic acid, uses 56-05-3, 2-Amino-4,6-dichloropyrimidine 56-06-4, 2,4-Diamino6-hydroxypyrimidine 56-09-7, 4,6-Dihydroxy-2-aminopyrimidine 56-10-0 56-34-8, Tetraethyl ammonium chloride 56-93-9, Benzyl trimethyl ammonium chloride 57-71-6, 2,3-Butane dione monoxime 58-33-3, Promethazine hydrochloride 58-55-9, Theophylline, uses 58-56-0, Pyridoxine hydrochloride 58-61-7, Adenosine, uses 58-63-9, Inosine 58-96-8, Uridine 59-31-4, 2-Hydroxyquinoline 59-49-4, 2(3H)-Benzoxazolone 59-66-5 59-97-2, 2-Benzyl-2-imidazoline hydrochloride 60-27-5, Creatinine 61-12-1, Dibucaine hydrochloride 61-25-6, Papaverine hydrochloride 61-82-5, 3-Amino-1,2,4-triazole 63-45-6, Primaquine diphosphate 64-20-0, Tetramethyl ammonium bromide 65-19-0, Yohimbine hydrochloride 65-22-5, Pyridoxal hydrochloride 65-71-4, 2,4-Dihydroxy-5-methylpyrimidine 66-22-8, 2,4(1H,3H)-Pyrimidinedione, uses 66-71-7, 1,10-Phenanthroline 67-03-8, Thiamine hydrochloride 67-51-6, 3,5-Dimethylpyrazole 67-52-7, Barbituric acid 67-71-0 68-05-3, Tetraethyl ammonium iodide 68-41-7, Cycloserine 68-94-0 69-09-0, Chlorpromazine hydrochloride 69-74-9, Cytosine arabinoside hydrochloride 69-89-6, Xanthine 71-91-0, Tetraethyl ammonium bromide 72-14-0 72-40-2, 4-Amino-5-imidazole carboxamide hydrochloride 73-24-5, 6-Aminopurine, uses 73-40-5, Guanine 75-57-0, Tetramethyl ammonium chloride 75-58-1, Tetramethyl ammonium iodide 76-29-9, 3-Bromocamphor 77-71-4, 5,5-Dimethylhydantoin 77-73-6, Dicyclopentadiene 78-19-3 78-40-0, Triethoxyphosphine oxide 78-51-3 79-92-5, Camphene 82-82-6, Pyridoxic acid 83-33-0, 1-Indanone 84-88-8, 8-Hydroxyquinoline-5-sulfonic acid 86-95-3, 2,4-Quinolinediol 87-39-8, Violuric acid 87-51-4, Indole-3-acetic acid, uses 87-90-1 89-00-9, 2,3-Pyridine dicarboxylic acid 89-01-0, 2,3-Pyrazine dicarboxylic acid 91-19-0, Quinoxaline 91-22-5, Quinoline, uses 91-44-1, 7-Diethylamino-4-methylcoumarin 91-56-5, Indole-2,3-dione 91-63-4, Quinaldine 92-48-8, 6-Methylcoumarin 92-53-5, 4-Phenylmorpholine 93-10-7, 2-Quinolinecarboxylic acid 93-37-8, 2,7-Dimethylquinoline 94-66-6, 2-Allylcyclohexanone 94-67-7, Salicylaldoxime 95-11-4, 5-Norbornene-2-carbonitrile 95-12-5, 5-Norbornene-2-methanol 95-14-7, 1H-Benzotriazole 95-15-8, Thionaphthene 95-16-9, Benzothiazole 95-20-5, 2-Methylindole 95-21-6, 2-Methylbenzoxazole 95-25-0, Chlorzoxazone 95-96-5, 3,6-Dimethyl-1,4-dioxane-2,5-dione 96-45-7, 2-Imidazolidinethione 96-48-0 96-50-4, 2-Aminothiazole 97-59-6, 5-Ureidohydantoin 98-02-2, Furfurylmercaptan 98-04-4, Phenyl trimethyl ammonium iodide 98-79-3 98-96-4, Pyrazinecarboxamide 100-26-5, 2,5-Pyridine dicarboxylic acid 100-64-1, Cyclohexanone oxime 101-02-0, Triphenylphosphite 101-68-8 102-85-2, Tributylphosphite 103-76-4, 1-(2-Hydroxyethyl)piperazine 104-50-7 104-67-6 104-74-5, 1-Dodecylpyridinium chloride 105-55-5, 1,3-Diethyl-2-thiourea 105-60-2, uses 105-81-7

106-02-5, Oxacyclohexadecan-2-one 107-29-9, Acetaldoxime 108-27-0 108-29-2 108-31-6, Maleic anhydride, uses 108-33-8 108-49-6, 2,6-Dimethylpiperazine 108-52-1 108-55-4, Glutaric anhydride 108-74-7, 1,3,5-Trimethylhexahydro-1,3,5-triazine 108-77-0, Cyanuric chloride 108-80-5, Cyanuric acid 108-94-1, Cyclohexanone, uses 108-97-4, 4H-Pyran-4-one 109-01-3, 1-Methylpiperazine 109-05-7, 2-Methylpiperidine 109-12-6, 2-Aminopyrimidine 109-46-6, 1,3-Dibutyl-2-thiourea 109-57-9, 1-Allyl-2-thiourea 110-61-2, Succinonitrile 110-88-3, 1,3,5-Trioxane, uses 110-89-4, Piperidine, uses 111-49-9, Homopiperidine 112-02-7, Palmityl trimethyl ammonium chloride 112-03-8, Stearyl trimethyl ammonium chloride 113-52-0, Imipramine hydrochloride 115-86-6, Triphenoxyphosphine oxide 118-00-3, Guanosine, uses 119-44-8, Xanthopterin 119-51-7, 1-Phenyl-1,2-propanedione 2-oxime 119-84-6 120-57-0, Piperonal 120-72-9, Indole, uses 120-73-0, Purine 120-75-2, 2-Methylbenzothiazole 120-93-4, 2-Imidazolidone 121-45-9, Trimethylphosphite 121-54-0, Benzethionium chloride 121-66-4, 2-Amino-5-nitrothiazole 122-18-9, Benzylcetyldimethylammonium chloride 122-19-0, Benzylstearyldimethylammonium chloride 122-52-1, Triethyl phosphite 122-96-3, 1,4-Bis(2-hydroxyethyl)piperazine 123-00-2, 4-(3-Aminopropyl)morpholine 123-03-5, Acetoquat CPC 123-56-8, Succinimide 124-03-8, Cetyl dimethyl ethyl ammonium bromide 126-33-0, Tetramethylenesulfone 126-54-5, 2,4,8.10-Tetraoxaspiro[5.5]undecane 127-06-0, Acetone oxime 127-63-9, Phenylsulfone 127-69-5, Sulfisoxazole 128-53-0 130-61-0, Thioridazine hydrochloride 133-32-4, 3-Indolebutyric acid 134-31-6 136-85-6 138-24-9, Phenyl trimethyl ammonium chloride 139-07-1, Dodecyl benzyl dimethyl ammonium chloride 139-08-2, Benzyltetradecyldimethylammonium chloride 140-08-9, Tris(2-chloroethyl)phosphite 140-31-8, 1-(2-Aminoethyl)piperazine 140-72-7, Acetoquat CPB 140-87-4, Cyanoacetohydrazide 141-30-0, 3,6-Dichloropyridazine 141-90-2, 2-Thiouracil 141-94-6, Hexetidine 144-35-4 146-68-9 146-80-5, Xanthosine 147-85-3, Proline, uses 148-24-3, 8-Hydroxyquinoline, uses 149-29-1, Patulin 150-60-7, Benzyldisulfide 153-98-0, Serotonin hydrochloride 154-69-8, Tripelennamine hydrochloride 154-97-2 155-54-4, Hydroorotic acid 156-83-2, 2,6-Diamino-4-chloropyrimidine 177-10-6, 1,4-Dioxaspiro[4.5]decane 177-11-7, 4-Piperidone ethylene ketal 180-84-7, 1,7-Dioxaspiro[5.5]undecane 183-97-1, 1,4-Cyclohexanedione bis(ethylene ketal) 230-27-3, 7,8-Benzoquinoline 230-46-6, 1,7-Phenanthroline 253-52-1, Phthalazine 271-44-3, Indazole 271-58-9, 2,1-Benzisoxazole 271-63-6, 7-Azaindole 271-95-4, 1,2-Benzisoxazole 273-13-2, 2,1,3-Benzothiadiazole 273-53-0, Benzoxazole 275-51-4, Azulene 279-23-2, Norbornane 286-62-4, Cyclooctene oxide 286-75-9, 1,2,5,6-Diepoxycyclooctane 286-99-7, 13-Oxabicyclo[10.1.0]tridecane 288-13-1, Pyrazole 288-32-4, Imidazole, uses 288-36-8, 1,2,3-Triazole 288-88-0, 1H-1,2,4-Triazole 288-94-8, 1H-Tetrazole 289-80-5, Pyridazine 289-95-2, Pyrimidine 290-37-9, Pyrazine 290-87-9, 1,3,5-Triazine 291-21-4, 1,3,5-Trithiane 294-80-4, 1,5,9-Triazacyclododecane 294-90-6, 1,4,7,10-Tetraazacyclododecane 294-93-9, 1,4,7,10-Tetraoxacyclododecane 295-37-4, 1,4,8,11-Tetraazacyclotetradecane 295-91-0, 1,5,9,13-Tetrathiacyclohexadecane 296-41-3, 1,4,7,10,13,16-Hexathiacyclooctadecane 298-46-4, Carbamazepine 298-96-4 299-11-6, Phenazine methosulfate 300-68-5, Tremorine

Searcher : Shears 308-4994

dihydrochloride 303-26-4, 1-(4-Chlorobenzhydryl)piperazine 304-88-1 305-33-9, Iproniazid phosphate 306-44-5, Pyruvaldehyde-1-oxime 311-28-4, Tetrabutyl ammonium iodide 312-45-8, Hemicholinium-3 315-30-0, 4-Hydroxypyrazolo[3,4-d]pyrimidine 321-30-2 326-61-4, Piperonyl acetate 343-27-1, Harmine hydrochloride 343-94-2, Tryptamine hydrochloride
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(transparentizing agent for electrophotog. migration imaging members)

IT 363-11-1, Harmaline hydrochloride 373-68-2, Tetramethylammonium fluoride 383-29-9, 4-(Fluorophenyl)sulfone 392-12-1, Indole-3-pyruvic acid 440-17-5, Trifluoroperazine dihydrochloride 444-27-9, Thiazolidine-4-carboxylic acid 452-35-7, 6-Ethoxy-2-benzothiazole sulfonamide 455-15-2, 4-(Fluorophenyl)methylsulfone 461-72-3, Hydantoin 461-98-3, 4-Amino-2,6-dimethylpyrimidine 470-82-6, Cineole 479-59-4, Julolidine 486-73-7, 1-Isoquinolinecarboxylic acid 486-74-8, 4-Quinolinecarboxylic acid 487-21-8, 2,4(1H,3H)-Pteridinedione 487-89-8, Indole-3-carboxaldehyde 490-11-9, 3,4-Pyridine dicarboxylic acid 490-91-5, Thymoquinone 491-30-5, 1-Hydroxyisoquinoline 491-37-2, 4-Chromanone 491-38-3, 4H-1-Benzopyran-4-one 492-97-7, 2,2'-Bithiophene 495-18-1, Benzohydroxamic acid 495-76-1, Piperonyl alcohol 496-11-7, Indan 496-76-4 497-25-6, 2-Oxazolidone 497-38-1, 2-Norbornanone 498-66-8, Norbornene 499-80-9, 2,4-Pyridine dicarboxylic acid 499-81-0, 3,5-Pyridine dicarboxylic acid 499-83-2, 2,6-Pyridine dicarboxylic acid 502-42-1, Cycloheptanone 502-44-3, 2-Oxepanone 502-49-8, Cyclooctanone 502-72-7, Cyclopentadecanone 503-87-7, 2-Thiohydantoin 504-07-4, 5,6-Dihydrouracil 504-31-4, 2H-Pyran-2-one 505-23-7, 1,3-Dithiane 505-29-3, 1,4-Dithiane 505-66-8, Homopiperazine 512-56-1, Trimethoxyphosphine oxide 520-45-6, Dehydroacetic acid 524-36-7, Pyridoxamine dihydrochloride 525-79-1, Kinetin 526-55-6, 3-Indole ethanol 529-17-9, Tropane 532-24-1, Tropinone 532-34-3 532-54-7 533-75-5, Tropolone 535-75-1, 2-Piperidine carboxylic acid 538-71-6, Dodecyl dimethyl 2-phenoxyethyl ammonium bromide 539-80-0, Tropone 541-59-3, Maleimide 546-88-3, Acetohydroxamic acid 551-06-4, 1-Naphthylisothiocyanate 553-86-6, 2-Coumaranone 556-90-1, Pseudothiohydantoin 562-46-9, 4,4-Dimethyl-1,3-cyclohexanedione 574-25-4, 6-Mercaptopurine riboside 574-98-1 578-66-5, 8-Aminoquinoline 578-67-6, 5-Hydroxyquinoline 580-15-4, 6-Aminoquinoline 580-17-6, 3-Aminoquinoline 584-13-4, 4-Amino-1,2,4-triazole 591-54-8, 4-Aminopyrimidine 593-84-0, Guanidinethiocyanate 597-35-3, Ethylsulfone 598-04-9, Butylsulfone 603-35-0, Triphenylphosphine, uses 608-08-2, 3-Acetoxyindole 611-08-5, 5-Nitrouracil 611-34-7, 5-Aminoquinoline 611-36-9, 4-Hydroxyquinoline 614-96-0, 5-Methylindole 615-13-4, 2-Indanone 615-16-7, 2-Hydroxybenzimidazole 615-18-9, 2-Chlorobenzoxazole 615-22-5, 2-(Methylthio)benzothiazole 616-02-4, Citraconic anhydride 616-04-6, 1-Methylhydantoin 616-42-2, Dimethylsulfite 616-45-5, 2-Pyrrolidinone 620-32-6, Benzylsulfone 622-26-4, 4-Piperidineethanol 622-40-2, 4-(2-Hydroxyethyl)morpholine 622-75-3, 1,4-Benzenediacetonitrile 623-81-4, Diethylsulfite 624-82-8, Formamidoxime 626-22-2, 1,3-Benzenediacetonitrile 626-48-2, 2,4-Dihydroxy-6-methylpyrimidine 628-13-7, Pyridine hydrochloride 628-87-5, Iminodiacetonitrile 631-40-3,

Tetrapropyl ammonium iodide 634-97-9, Pyrrole-2-carboxylic acid 635-46-1, 1,2,3,4-Tetrahydroquinoline 636-26-0, 5-Methyl-2-thiouracil 636-73-7, 3-Pyridinesulfonic acid 638-16-4, Trithiocyanuric acid 670-80-4, 1-Morpholino-1-cyclohexene 672-89-9 673-66-5 674-26-0 675-09-2 675-20-7, 2-Piperidone 695-06-7 695-53-4, 5,5-Dimethyloxazolidine-2,4-dione 696-07-1, 5-Iodouracil 699-98-9, Furo[3,4-b]pyridine-5,7-dione 705-86-2 706-14-9 706-31-0 710-04-3 712-97-0, 6-Nitropiperonal 713-95-1 722-27-0 722-75-8, 2-Azido-3-ethylbenzothiazolium tetrafluoroborate 723-46-6, Sulfamethoxazole 729-99-7 734-59-8, (4-Bromophenyl)diphenyl phosphine 764-42-1, Fumaronitrile 765-70-8, 3-Methyl-1,2-cyclopentanedione 766-39-2, 2,3-Dimethylmaleic anhydride 767-15-7, 2-Amino-4,6-dimethylpyrimidine 767-64-6, 4-Amino-2,1,3-benzothiadiazole 768-66-1, 2,2,6,6-Tetramethylpiperidine 771-50-6, Indole-3-carboxylic acid 771-51-7, 3-Indolylacetonitrile 771-99-3, 4-Phenylpiperidine 791-28-6, Triphenylphosphine oxide 804-63-7, Quinine sulfate 822-36-6, 4-Methylimidazole 826-73-3, 1-Benzosuberone 826-81-3, 8-Hydroxyquinaldine 830-13-7, Cyclododecanone 830-96-6, 3-Indole propionic acid 831-91-4, Benzylphenylsulfide 832-10-0, Cyclotridecanone 838-85-7, Diphenylphosphate 866-97-7, Tetrapentylammonium bromide 873-69-8, 2-Pyridine aldoxime 873-83-6 874-23-7, 2-Acetylcyclohexanone 877-43-0, 2,6-Dimethylquinoline 878-13-7, Cycloundecanone 879-37-8, Indole-3-acetamide 879-65-2, 2-Quinoxalinecarboxylic acid 917-23-7 930-21-2, 2-Azetidinone 931-36-2, 2-Ethyl-4-methylimidazole 932-16-1, 2-Acetyl-1-methylpyrrole 932-52-5, 5-Aminouracil 932-62-7, 3-Acetyl-1-methylpyrrole 932-90-1, Benzaldehyde oxime 934-32-7, 2-Aminobenzimidazole 934-48-5, 3,5-Dimethylpyrazole-1-carboxamide 935-30-8, 2-Azacyclononanone 936-51-6 936-52-7, 1-Morpholino-1-cyclopentene 940-71-6, Phosphonitrilic chloride trimer 941-69-5 947-05-7, Oxacyclotridecan-2-one 999-81-5 1003-29-8, Pyrrole-2-carboxaldehyde 1004-38-2, 2,4,6-Triaminopyrimidine 1006-23-1, 5-Nitroso-2,4,6-triaminopyrimidine 1006-94-6, 5-Methoxyindole 1008-76-0 1010-95-3, 5-Methyl tryptamine hydrochloride 1024-99-3, 5-Iodouridine 1031-93-2 1034-49-7, Bromomethyl triphenylphosphonium bromide 1067-12-5, Tris(hydroxymethyl)phosphine oxide 1072-62-4, 2-Ethylimidazole 1072-67-9, 3-Amino-5-methylisoxazole 1072-72-6, Tetrahydrothiopyran-4-one 1072-83-9, 2-Acetylpyrrole 1074-51-7, Cyclooctanone oxime 1074-89-1, 6-Methoxypurine 1076-22-8, 3-Methylxanthine 1077-28-7, 1,2-Dithiolane-3-pentanoic acid 1081-34-1, 2,2':5',2''-Terthiophene 1094-08-2, Ethopropazine hydrochloride 1100-88-5, Benzyl triphenylphosphonium chloride 1101-41-3, Tetraphenylbiphosphine 1102-19-8, 1,1'-Dibenzyl-4,4'-bipyridinium dichloride 1112-67-0, Tetrabutylammonium chloride 1119-85-3, 1,4-Dicyano-2-butene 1119-97-7, Myristyl trimethyl ammonium bromide 1121-07-9 1122-17-4, Dichloromaleic anhydride 1123-49-5, 3,5-Dimethyl-4-nitroisoxazole 1124-11-4, Tetramethylpyrazine 1125-21-9, 2,6,6-Trimethyl-2-cyclohexene-1,4-dione 1126-58-5, 1-(Carboxymethyl)pyridinium chloride hydrazide 1131-15-3, Phenylsuccinic anhydride 1132-61-2, 4-Morpholinepropanesulfonic acid 1135-32-6, 1,2-Bis(4-pyridyl)ethylene 1136-45-4 1141-88-4 1148-79-4, 2,2':6',2''-Terpyridine 1159-54-2, Tris(4-chlorophenyl)phosphine 1163-36-6 1185-59-7, Tetraethylammonium acetate 1192-28-5,

Cyclopentanone oxime 1193-21-1, 4,6-Dichloropyrimidine 1193-24-4, 4,6-Dihydroxypyrimidine 1193-65-3, 3-Quinuclidinone hydrochloride 1194-22-5, 4,6-Dihydroxy-2-methylpyrimidine 1195-16-0 1195-59-1, 2,6-Pyridinedimethanol 1195-79-5, Fenchone 1196-57-2, 2-Quinoxalinol 1197-19-9, 4-(Dimethylamino)benzonitrile 1198-30-7, 1-Cyanoisoquinoline 1199-65-1, 1-Ethyl-4-(methoxycarbonyl)pyridinium iodide 1203-64-1, 1-(2,3-Xylyl)piperazine monohydrochloride 1204-06-4, 3-Indole acrylic acid 1210-83-9 1235-21-8, Acetonyltriphenylphosphonium chloride 1259-35-4, Tris(pentafluorophenyl)phosphine 1432-43-5, 3-Acetyl-2-oxazolidinone 1436-43-7, 2-Cyanoquinoline 1438-16-0, 3-Aminorhodanine 1444-65-1, 2-Phenylcyclohexanone 1455-77-2, 3,5-Diamino-1,2,4-triazole 1457-47-2, 3-Allylrhodanine 1463-10-1, 5-Methyluridine 1466-48-4, Tris(2-cyanoethyl)nitromethane 1467-16-9, Imidazole hydrochloride 1476-98-8, Hydroquinidine hydrochloride 1477-42-5, 2-Amino-4-methylbenzothiazole 1477-49-2, 3-Indole glyoxalic acid 1477-50-5, Indole-2-carboxylic acid 1481-93-2, 4-Chromanol
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(transparentizing agent for electrophotog. migration imaging members)

IT 1484-84-0, 2-Piperidineethanol 1497-17-2 1497-19-4 1499-17-8 1502-06-3, Cyclodecanone 1530-32-1, Ethyl triphenylphosphonium bromide 1530-45-6, Carbethoxymethyl triphenylphosphonium bromide 1530-89-8, 4-Morpholinecarbonitrile 1560-54-9, Allyltriphenylphosphonium bromide 1572-10-7, 3-Amino-5-phenylpyrazole 1603-91-4, 2-Amino-4-methylthiazole 1614-12-6, 1-Aminobenzotriazole 1631-25-0 1631-26-1 1632-73-1, Fenchyl alcohol 1632-83-3, 1-Methylbenzimidazole 1633-83-6 1640-39-7, 2,3,3-Trimethylindolenine 1641-40-3 1643-19-2, Tetrabutylammonium bromide 1670-81-1, Indole-5-carboxylic acid 1672-48-6, 6-Amino-5-nitroso-2-thiouracil 1677-27-6, 3H-1,2-Benzodithiol-3-one 1696-20-4, 4-Acetylmorpholine 1722-10-7, 3-Chloro-6-methoxypyridazine 1722-12-9, 2-Chloropyrimidine 1725-03-7, Oxacyclododecan-2-one 1746-03-8, Vinylphosphonic acid 1750-12-5, 4-Amino-3-hydrazino-5-mercapto-1,2,4-triazole 1759-28-0, 4-Methyl-5-vinylthiazole 1774-47-6, Trimethylsulfoxonium iodide 1779-48-2, Phenylphosphinic acid 1779-49-3, Methyl triphenylphosphonium bromide 1779-51-7 1779-58-4, Carbomethoxymethyl triphenylphosphonium bromide 1779-81-3, 2-Amino-2-thiazoline 1780-40-1, 2,4,5,6-Tetrachloropyrimidine 1809-21-8, Dipropylphosphite 1811-28-5 1812-53-9, Dicetyl dimethyl ammonium chloride 1820-80-0, 3-Aminopyrazole 1821-52-9, 3-Indolelactic acid 1835-65-0, Tetrafluorophthalonitrile 1846-76-0, Ethyl-3-coumarincarboxylate 1910-42-5, 1,1'-Dimethyl-4,4'-bipyridinium dichloride 1941-19-1, Tetramethylphosphonium chloride 1941-30-6, Tetrapropyl ammonium bromide 1953-54-4, 5-Hydroxyindole 2001-45-8, Tetraphenylphosphonium chloride 2002-59-7 2024-83-1, 3,4-Dimethoxybenzonitrile 2033-24-1, 2,2-Dimethyl-1,3-dioxane-4,6-dione 2065-66-9, Methyl triphenylphosphonium iodide 2065-67-0, Tetraphenylphosphonium iodide 2075-45-8, 4-Bromopyrazole 2085-33-8 2091-46-5, Propargyltriphenylphosphonium bromide 2114-02-5 2124-55-2, Indole-4-carboxylic acid 2127-03-9, Aldrithiol-2 2133-40-6 2138-24-1, Tetrahexyl ammonium iodide 2142-01-0 2164-83-2, 4,6-Dihydroxy-5-nitropyrimidine 2170-03-8, Itaconic anhydride 2179-57-9, Allyldisulfide 2181-42-2,

Trimethylsulfonium iodide 2181-44-4, Trimethylsulfonium methylsulfate 2213-43-6, 1-Aminopiperidine 2218-94-2, Nitron 2232-08-8 2234-26-6, 2-Norbornanecarbonitrile 2235-00-9 2254-94-6, 3-Methylbenzothiazole-2-thione 2292-53-7, Mandelohydroxamic acid 2295-31-0, 2,4-Thiazolidinedione 2301-80-6, 1,4-Dimethylpyridinium iodide 2304-30-5, Tetrabutylphosphonium chloride 2328-12-3, 6,7-Dimethoxy-1,2,3,4-tetrahydroisoquinoline hydrochloride 2349-67-9, 5-Amino-1,3,4-thiadiazole-2-thiol 2380-94-1, 4-Hydroxyindole 2382-79-8 2386-25-6, 3-Acetyl-2,4-dimethylpyrrole 2390-68-3, Didecyl dimethyl ammonium bromide 2426-02-0, 3,4,5,6-Tetrahydrophthalic anhydride 2434-53-9, 6-Amino-1-methyluracil 2456-81-7, 4-Pyrrolidinopyridine 2466-09-3, Pyrophosphoric acid 2466-76-4, 1-Acetylimidazole 2472-13-1, 6,7-Dimethoxy-2-tetralone 2491-17-0 2524-67-6, 4-Morpholinoaniline 2547-66-2, 1,3,5-Tribenzylhexahydro-1,3,5-triazine 2556-73-2 2620-50-0, Piperonyl amine 2622-14-2, Tricyclohexylphosphine 2637-37-8, 2-Quinolinethiol 2645-22-9, Aldrithiol-4 2683-82-1 2700-22-3, Benzylidenemalononitrile 2740-94-5, 1-Benzyl-3-methyl-2-thiourea 2751-90-8, Tetraphenylphosphonium bromide 2758-06-7, 2-Bromoethyl trimethyl ammonium bromide 2759-28-6, 1-Benzylpiperazine 2761-13-9 2763-96-4, Muscimol 2782-91-4, 1,1,3,3-Tetramethyl-2-thiourea 2784-27-2, 5-(4-Hydroxyphenyl)-5-phenyl hydantoin 2825-83-4 2851-95-8, 2-Methyl-1-vinylimidazole 2892-62-8 2938-48-9, 2,2-Dimethylglutaric anhydride 2963-78-2, Butyrylcholine chloride 2973-09-3 3001-63-6, QUAB 426 3009-13-0, 1-(3-Nitrobenzyloxymethyl)pyridinium chloride 3010-24-0, M_QUAT 32 3012-37-1, Benzylthiocyanate 3073-77-6, 2-Amino-5-nitropyrimidine 3085-79-8, Methyl tributyl ammonium iodide 3100-36-5, 8-Cyclohexadecen-1-one 3112-31-0, 3,5-Pyrazoledicarboxylic acid 3115-68-2, Tetrabutylphosphonium bromide 3119-93-5, 3-Ethyl-2-methylbenzothiazolium iodide 3140-73-6, 2-Chloro-4,6-dimethoxy-1,3,5-triazine 3162-29-6, 3',4'-(Methylenedioxy)acetophenone 3189-43-3, Tetracyanoethylene oxide 3194-55-6, 1,2,5,6,9,10-Hexabromocyclododecane 3205-94-5, 1-Cyclopentene-1,2-dicarboxylic anhydride 3232-84-6, Urazole 3237-50-1, Alloxan monohydrate 3251-69-2, 4-Imidazoleacetic acid hydrochloride 3323-73-7, 1-Benzyl-3-hydroxypyridinium chloride 3343-41-7, 2-Pyridyl hydroxymethanesulfonic acid 3350-30-9, Cyclononanone 3363-56-2 3397-62-4 3398-16-1, 4-Bromo-3,5-dimethylpyrazole 3399-67-5, 2-Aminoethyl trimethyl ammonium chloride hydrochloride 3419-32-7, Ethyl-6-methyl-2-oxo-3-cyclohexene-1-carboxylate 3433-37-2, 2-Piperidinemethanol 3438-48-0, 4-Phenylpyrimidine 3485-84-5 3493-12-7, (3-Amino-3-carboxypropyl)dimethylsulfonium chloride 3505-67-7, 1,6-Dioxaspiro[4.4]nonane-2,7-dione 3528-17-4, Thiochroman-4-one 3528-58-3, 5-Amino-1-ethylpyrazole 3607-17-8, 3-Bromopropyl triphenylphosphonium bromide 3641-13-2 3647-69-6, 4-(2-Chloroethyl)morpholine hydrochloride 3658-48-8, Bis(2-ethylhexyl)phosphite 3658-77-3 3674-54-2, Tetrabutylammonium thiocyanate 3695-98-5, 1,1,3,3-Propanetetracarbonitrile 3709-18-0, 2,2,5-Trimethyl-1,3-dioxane-4,6-dione 3724-43-4, Chloromethylene dimethyl ammonium chloride 3731-59-7 3740-59-8 3747-74-8 3764-01-0, 2,4,6-Trichloropyrimidine 3766-55-0, 4-Allyl-3-thiosemicarbazide 3785-01-1, 2-[4-(Dimethylamino)styryl]-1-ethylpyridinium iodide 3859-39-0, 2-Acetyl-1,3-cyclopentanedione 3882-98-2 3934-20-1, 2,4-Dichloropyrimidine 3949-36-8, 3-Acetylcoumarin 3973-70-4,

1-Amino-4-(2-hydroxyethyl)piperazine 3977-29-5 4005-51-0, 2-Amino-1,3,4-thiadiazole 4009-98-7, (Methoxymethyl)triphenylphosphonium chloride 4024-14-0, 1-Methyl-2-tetralone 4056-73-9, 2-Acetyl-1,3-cyclohexanedione 4100-80-5, Methylsuccinic anhydride 4156-16-5 4166-53-4, 3-Methylglutaric anhydride 4199-89-7, 5-Chloro-1,10-phenanthroline 4207-56-1, Phenyltrimethylammonium tribromide 4254-29-9, 2-Indanol 4303-88-2, Hemicholinium-15 4316-42-1, 1-Butylimidazole 4317-06-0, Tetraethylphosphonium iodide 4317-07-1, Tetraethylphosphonium bromide 4319-49-7, 4-Aminomorpholine 4328-13-6, Tetrahexylammonium bromide 4363-93-3, 4-Quinolinecarboxaldehyde 4368-51-8, Tetraheptylammonium bromide 4385-35-7, 3-Isochromanone 4394-85-8, 4-Formylmorpholine 4407-40-3, 2,4-Bis(methylthio)-6-chloro-1,3,5-triazine 4421-08-3, 4-Hydroxy-3-methoxybenzonitrile 4421-09-4, 1,3-Benzodioxole-5-carbonitrile 4423-79-4, 1,4-Dioxaspiro[4.5]decan-2-one 4432-31-9, 4-Morpholine ethanesulfonic acid 4433-40-3, 5-(Hydroxymethyl)uracil 4437-20-1, Furfuryldisulfide 4439-02-5, 3,4-(Methylenedioxy)phenylacetonitrile 4441-17-2, Tripiperidinophosphine oxide 4468-59-1, 4-Hydroxy-3-methoxyphenylacetonitrile 4480-83-5, Diglycolic anhydride 4519-28-2, Tetramethylphosphonium bromide 4542-47-6, 4-Morpholinepropionitrile 4546-48-9, Methyl-2-phenyl-4-quinolinecarboxylate 4546-95-6, 1H-1,2,3-Triazole-4,5-dicarboxylic acid 4551-69-3, 4-Benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one 4559-70-0, Diphenylphosphine oxide 4568-71-2, 3-Benzyl-5-(2-hydroxyethyl)-4-methylthiazolium chloride 4593-16-2, 1-Acetyl-3-methylpiperidine 4595-59-9, 5-Bromopyrimidine 4606-65-9, 3-Piperidinemethanol 4663-98-3, 3,4-Pyridinedicarboxamide 4664-01-1, 1H-Pyrrolo[3,4-c]pyridine-1,3(2H)-dione 4664-08-8, Furo[3,4-c]pyridine-1,3-dione 4672-38-2, Propylphosphonic acid 4727-72-4, 1-Benzyl-4-hydroxypiperidine 4730-54-5, 1,4,7-Triazacyclononane 4746-97-8, 1,4-Cyclohexanedione monoethylene ketal 4762-26-9, Hexyl triphenylphosphonium bromide 4774-14-5, 2,6-Dichloropyrazine 4807-55-0, Methylrhodanine 4812-14-0, 3-Pyridyl hydroxymethanesulfonic acid 4814-74-8 4847-93-2 4897-50-1, 4-Piperidinopiperidine 4904-61-4, 1,5,9-Cyclododecatriene 4916-57-8, 1,2-Bis(4-pyridyl)ethane 4940-11-8 4965-17-7, Tetrapentyl ammonium chloride 4975-73-9 5019-82-9, Bicyclo[3.2.1]octan-2-one 5022-29-7 5034-06-0, Trimethylsulfoxonium chloride 5036-48-6, 1H-Imidazole-1-propanamine 5044-52-0, Vinyltriphenylphosphonium bromide 5049-61-6, Aminopyrazine 5086-74-8 5086-74-8, (2,3,5,6-Tetrahydro-6-phenylimidazo[2,1-.b]thiazole hydrochloride 5103-42-4 5108-96-3
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(transparentizing agent for electrophotog. migration imaging members)

IT 5137-55-3, Tricapryl methyl ammonium chloride 5142-22-3, 1-Methyladenine 5142-23-4, 3-Methyladenine 5154-02-9, 1,5-Isoquinolinediol 5157-08-4 5197-95-5, Benzyl triethyl ammonium bromide 5222-73-1, 3,4-Dimethoxy-3-cyclobutene-1,2-dione 5231-87-8 5240-72-2, 2-Norbornane methanol 5293-84-5, Chloromethyl triphenylphosphonium chloride 5327-10-6 5334-23-6 5348-51-6, 2-Hydroxy-4-methylpyrimidine hydrochloride 5350-41-4, Benzyl trimethyl ammonium bromide 5350-96-9, 4-Nitrobenzyl trimethyl ammonium chloride 5381-99-7 5394-18-3 5394-63-8

5395-04-0, Bis(pentamethylene)urea 5417-82-3, (1-Ethoxyethylidene)malononitrile 5418-11-1 5418-63-3 5418-95-1, 2-Guanidinobenzimidazole 5424-21-5, 2,4-Dichloro-6-methylpyrimidine 5425-44-5, 2-Phenyl-1,3-dithiane 5427-26-9, 5-Hydantoin acetic acid 5428-64-8, Pentaquine phosphate 5431-44-7, 2,6-Pyridine dicarboxaldehyde 5440-00-6 5452-83-5, 2-(2-Piperidinoethyl)pyridine 5453-80-5, 5-Norbornene-2-carboxaldehyde 5460-29-7 5464-79-9, 2-Amino-4-methoxybenzothiazole 5467-94-7 5518-52-5, Tri-2-furylphosphine 5521-55-1, 5-Methyl-2-pyrazinecarboxylic acid 5535-48-8, Phenylvinylsulfone 5538-94-3, Dioctyl dimethyl ammonium chloride 5579-84-0, 2-(2-Methylaminoethyl)Pyridine dihydrochloride 5585-96-6, 4-Indolyl acetate 5600-21-5, 2-Amino-4-chloro-6-methylpyrimidine 5614-64-2, 2-Amino-6,8-dihydroxypurine 5617-74-3, 3-Oxabicyclo[3.1.0]hexane-2,4-dione 5662-95-3, 3,3-Tetramethyleneglutaric anhydride 5732-44-5, 1,4-Butanediolcyclic sulfate 5807-14-7 5832-55-3 5922-92-9, Tetrahexylammonium chloride 5926-51-2, Bromomaleic anhydride 5932-53-6 5950-69-6, Hydrindantin dihydrate 5993-91-9 6018-41-3, Methylcoumalate 6020-54-8 6028-07-5, Harmalol hydrochloride 6035-45-6 6048-29-9, Phenacyl triphenylphosphonium bromide 6055-19-2, Cyclophosphamide monohydrate 6056-35-5 6066-82-6 6119-47-7 6126-22-3 6136-37-4, 1-Methylxanthine 6153-44-2, Methylorotate 6159-05-3, 1,1'-Diheptyl-4,4'-bipyridinium dibromide 6160-12-9, Sparteine sulfate pentahydrate 6164-78-9, 2,3-Pyrazinedicarboxamide 6209-44-5, 5-Nitrobarbituric acid trihydrate 6224-63-1, Tri-m-tolylphosphine 6228-25-7, 1,3-Dioxane-5,5-dimethanol 6228-47-3 6236-05-1, Nifuroxime 6238-13-7, 3-Quinuclidinol hydrochloride 6249-56-5, 3-Carboxypropyl trimethyl ammonium chloride 6266-23-5, 1-(Carboxymethyl)pyridinium chloride 6272-74-8 6281-14-7, 1,3,5-Tricyclohexylhexahydro-1,3,5-triazine 6302-94-9 6307-35-3, 2-Amino-5-bromo-6-methyl-4-pyrimidinol 6317-18-6, Methylene dithiocyanate 6318-55-4 6320-15-6, 6-Chloro-2,4-dimethoxypyrimidine 6351-10-6, 1-Indanol 6372-40-3, Isopropyldiphenyl phosphine 6425-32-7, 3-Morpholino-1,2-propanediol 6476-37-5, Dicyclohexylphenyl phosphine 6480-68-8, 3-Quinolinecarboxylic acid 6530-09-2, 3-Aminoquinuclidine dihydrochloride 6571-43-3, 2,3-Cyclododecenopyridine 6573-11-1, 1,4,7-Trithiacyclononane 6591-63-5, Quinidine sulfate dihydrate 6609-64-9, 2-Chloro-1,3,2-dioxaphospholane-2-oxide 6624-49-3, 3-Isoquinolinecarboxylic acid 6628-04-2, 4-Aminoquinaldine 6635-41-2, 2-Nitrobenzaldehyde oxime 6707-12-6, 5-Norbornene-2,2-dimethanol 6737-42-4, 1,3-Bis(diphenylphosphino)propane 6928-85-4, 1-Amino-4-methylpiperazine 6953-60-2 6959-47-3, 2-(Chloromethyl)pyridine hydrochloride 6959-66-6, 2-Mercapto-4-methylpyrimidine hydrochloride 6965-01-1 6967-12-0, 6-Aminoindazole 6968-75-8 6970-56-5 6994-25-8, 3-Amino-4-carbethoxypyrazole 7036-61-5, Propyl-1-(1-phenylethyl)imidazole-5-carboxylate hydrochloride 7065-23-8 7068-55-5 7083-71-8, Emetine dihydrochloride hydrate 7119-95-1, 1-Nitropyrazole 7144-05-0, 4-(Aminomethyl)piperidine 7145-99-5, 3,4-(Methylenedioxy)toluene 7164-43-4, 5-Aminoorotic acid 7173-51-5, BIO-DAC 7173-54-8, Tridodecylmethylammonium chloride 7182-08-3, 1-Morpholino-1-cycloheptene 7203-96-5 7205-98-3, Chloromethylphenylsulfone 7209-38-3, 1,4-Bis(3-aminopropyl)piperazine 7237-34-5, 2-Hydroxyethyl triphenylphosphonium bromide 7250-67-1, 1-(2-

Chloroethyl)pyrrolidine hydrochloride 7259-44-1, Norharman hydrochloride 7281-04-1, Benzyldodecyldimethylammonium bromide 7325-46-4, 1,4-Benzenediacetic acid 7333-63-3, 4-Bromobutyl triphenylphosphonium bromide 7336-51-8, 2-Acetamido-4-methylthiazole 7364-25-2, 3-Indazolinone 7368-65-2, Tetraethylphosphonium chloride 7459-75-8, 3,6-Diaminoacridine hydrochloride 7519-74-6, Thiocamphor 7531-52-4 7569-26-8 7648-01-3, 3-Ethylrhodanine 7650-89-7, Tribenzylphosphine 7673-09-8, Trichloromelamine 7752-82-1, 2-Amino-5-bromopyrimidine 7757-83-7, Sodium sulfite 7779-27-3, 1,3,5-Triethylhexahydro-1,3,5-triazine 7797-83-3, 2,3-(Methylenedioxy)benzaldehyde 10212-25-6, Cyclocytidine hydrochloride 10247-90-2, Tetraheptylammonium chloride 10310-21-1, 2-Amino-6-chloropurine 10333-11-6 10342-85-5, 4'-Piperidinoacetophenone 10357-84-3, 2,6-Dihydroxypyridine hydrochloride 10361-16-7, BTC812 10444-89-0, 2-Amino-5-trifluoromethyl-1,3,4-thiadiazole 10450-69-8, Oleyl trimethyl ammonium chloride 10513-45-8 10534-59-5, Tetrabutylammonium acetate 10574-66-0, 3-Ethyl-2-thioxo-4-oxazolidinone 10589-94-3, Dimethyl 3,7,12,17-tetramethyl-21oH,23oH-porphine-2,18-dipropionate 10591-31-8 13020-83-2, Purin-6-yltrimethylammonium chloride 13031-04-4 13078-30-3, 5-Anilino-1,2,3,4-thiatriazole 13149-00-3 13239-97-9 13327-27-0 13380-94-4 13395-71-6 13414-95-4 13492-21-2 13575-75-2, 6,7-Dimethoxy-1-tetralone 13618-91-2, 4,5,6,7-Tetrahydroindole 13621-25-5, 5,7-Dimethyl-1-tetralone 13621-47-1 13678-67-6 13678-68-7 13744-68-8 13750-62-4, 1-Benzyl-2-methylimidazole 13754-19-3, 4,5-Diaminopyrimidine 13808-64-5, 4-Bromo-3-methylpyrazole 13889-98-0, 1-Acetylpiperazine 13957-31-8, 4-Thiouridine 14068-53-2 14098-24-9, Benzo-18-crown-6 14098-44-3, Benzo-15-crown-5 14099-81-1, 1,2,3,4-Tetrahydroisoquinoline hydrochloride 14114-05-7, Cyclopropyl triphenylphosphonium bromide 14134-79-3, 3,3'-Dimethyloxacarbocyanine iodide 14161-11-6, 3,4,5-Trichloropyridazine 14173-30-9, 3-Hydroxy-2-(hydroxymethyl)pyridine hydrochloride 14174-08-4, Benzo-12-crown-4 14174-09-5, Dibenzo-24-crown-8 14187-32-7, Dibenzo-18-crown-6 14268-66-7, 3,4-(Methylenedioxy)aniline 14337-43-0, Ethylchlorooximido acetate 14338-32-0, 2-Chloro-1-methylpyridinium iodide 14492-68-3, Emcol E-607S 14667-55-1, 2,3,5-Trimethylpyrazine 14668-38-3 14678-02-5, 5-Amino-3-methylisoxazole 14866-33-2, Tetraoctylammonium bromide 14866-34-3, Tetradodecyl ammonium bromide 14866-42-3, Stearyltributylphosphonium bromide 14901-16-7 14937-42-9, Tetrakisdecylammonium bromide 14937-45-2, Hexadecyltributylphosphonium bromide 15328-32-2, 1H-Benzotriazole-1-carbonitrile 15341-08-9 15439-16-4, 1,4,8,12-Tetraazacyclopentadecane 15454-54-3, 5-Aminotetrazole monohydrate 15471-17-7 15733-83-2, 4-Methoxy-2-quinolinecarboxylic acid 15788-16-6, 5-Benzimidazolecarboxylic acid 15804-19-0, 2,3-Dihydroxyquinoxaline 15988-11-1, 4-Phenylurazole 16056-11-4, Phenyl trimethyl ammonium bromide 16069-36-6 16096-32-5, 4-Methylindole 16135-41-4, 6,7-Dimethoxy-3-isochromanone 16179-97-8, 2-Pyridylacetic acid hydrochloride 16311-69-6, 3,4-Dimethyl-5-(2-hydroxyethyl)thiazolium iodide 16489-90-0, 6-Ethoxy-1,2,3,4-tetrahydro-2,2,4-trimethylquinoline 16617-46-2, 3-Amino-4-pyrazolecarbonitrile 16691-43-3 16731-68-3, 2-Undecylimidazole 16834-13-2 16841-14-8, INCROQUAT BEHENYL

BDQ/P 16849-88-0 16898-52-5, 4,4'-Trimethylenedipiperidine 17216-08-9, 2-Acetyl-1-tetralone 17252-51-6 17301-53-0, Behenyl trimethyl ammonium chloride 17347-61-4, 2,2-Dimethylsuccinic anhydride 17354-79-9 17441-67-7, Bicyclo[2.2.2]oct-5-ene-2,3-dimethanol 17455-13-9, 1,4,7,10,13,16-Hexaoxacyclooctadecane 17455-23-1 17455-25-3, Dibenzo-30-crown-10 17577-28-5, (Ethoxycarbonylmethyl)triphenylphosphonium chloride 17692-39-6, Fomocaine 17760-91-7 17872-92-3 18042-62-1 18073-84-2
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(transparentizing agent for electrophotog. migration imaging members)

IT 18136-00-0 18270-61-6 18355-96-9, [(3-Dimethylamino)propyl]triphenylphosphonium bromide 18480-23-4, Allyltriphenylphosphonium chloride 18820-82-1, Pyridine hydrobromide 18851-33-7, 1,10-Phenanthroline monohydrochloride monohydrate 18903-01-0, 1-Cinnamylpiperazine 19064-64-3, 3,6-Dichloro-4-methylpyridazine 19158-51-1, Tosyl cyanide 19335-11-6, 5-Aminoindazole 19337-97-4 19438-60-9 19727-83-4, 6-Nitroindoline 19780-11-1, 2-Dodecen-1-ylsuccinic anhydride 19832-98-5, 4-Methyl-1-tetralone 19836-78-3, 3-Methyl-2-oxazolidinone 19845-69-3, 1,6-Bis(diphenylphosphino)hexane 20007-72-1 20021-19-6, Acetylmercaptosuccinic anhydride 20260-53-1, Nicotinoyl chloride hydrochloride 20353-93-9, Gold's reagent 20461-99-8, Ethyl 1,3-dithiolane-2-carboxylate 20462-00-4, Ethyl-1,3-dithiane-2-carboxylate 20633-06-1, 3,3,5,5-Tetramethyl-1,2-cyclopentanedione 20662-53-7 20893-01-0 21018-38-2 21236-74-8 21302-43-2 21331-80-6, 2-Dimethyl aminoethyltriphenylphosphonium bromide 21382-98-9, 4-(Methylthio)benzonitrile 21545-54-0 21568-87-6 21598-06-1, 5-Hydroxy-2-indolecarboxylic acid 21655-84-5, Harmane hydrochloride 21674-38-4, 2,4,6-Tris(perfluoroheptyl)-1,3,5-triazine 21789-66-2 21835-01-8, 3-Ethyl-2-hydroxy-2-cyclopenten-1-one 22047-25-2, Acetylpyrazine 22112-78-3 22177-51-1 22199-93-5 22204-91-7 22205-64-7, Piperidinethiocyanate 22428-86-0, 1,4-Dithiaspiro[4.5]decan-8-ol 22625-57-6 22884-29-3, Isobutyl triphenylphosphonium bromide 23250-03-5, (2-Hydroxyethyl)triphenylphosphonium chloride 23616-79-7, Benzyl tributyl ammonium chloride 23911-25-3, 4,4'-Ethylenebis(2,6-morpholinedione) 23978-09-8 23978-55-4, 1,4,10,13-Tetraoxa-7,16-diazacyclooctadecane 24165-03-5, Triphenylmethanesulfenyl chloride 24194-61-4, 1,4,8,11-Tetrathiacyclotetradecane 24295-03-2, 2-Acetylthiazole 24470-78-8, Isopropyl triphenylphosphonium iodide 24686-78-0, 1-Benzoyl-4-piperidone 24758-49-4, 4-Morpholinobenzophenone 25059-70-5, (2-Chloroethyl)dimethylsulfonium iodide 25134-21-8, Methyl 5-norbornene-2,3-dicarboxylic anhydride 25137-58-0 25155-18-4, Methyl benzethonium chloride 25316-59-0, Benzyl tributyl ammonium bromide 25423-56-7, 1,4,7,10-Tetrathiacyclododecane 25660-70-2 25991-27-9 26087-98-9, Bis(4-methyl-1-homopiperazinylthiocarbonyl)disulfide 26305-13-5 26371-07-3, 1-Piperidine propionic acid 26377-76-4 26472-00-4, Methylcyclopentadiene dimer 26487-67-2 26947-41-1, 3-Cyanoisoquinoline 27132-46-3, 4-Phenyl-1-propylpyridinium iodide 27511-79-1 27578-60-5, 1-(2-Aminoethyl)piperidine 27721-02-4, 1,5-Bis(diphenylphosphino)pentane 28132-01-6 28452-93-9, Butadienesulfone 28791-86-8 28822-58-4, 3-Isobutyl-1-methylxanthine 28948-54-1, 1,4,8,11,15,18,22,25-

Octathiacyclooctacosane 29096-75-1, 2-Amino-5,6-dimethylbenzimidazole 29587-92-6 29676-71-9, 2-Amino-4-thiazoleacetic acid 29710-98-3, Tridodecylmethylammonium iodide 29711-79-3, 4-Dimethylamino-1-naphthylisothiocyanate 29927-08-0, 2-Amino-5,6-dimethylbenzothiazole 29949-84-6, Tris(3-methoxyphenyl)phosphine 30354-18-8 30581-70-5, Cyclohexanedione 31005-02-4, 7-Ethoxycoumarin 31230-17-8, 3-Amino-5-methylpyrazole 31249-95-3, 1,4,10-Trioxa-7,13-diazacyclopentadecane 31250-06-3, 4,7,13,18-Tetraoxa-1,10-diazabicyclo[8.5.5]eicosane 31250-18-7 31252-42-3, 4-Benzylpiperidine 31351-20-9 31364-42-8 32014-70-3 32231-06-4, 1-Piperonyl piperazine 32233-40-2 32449-99-3 32501-93-2, Phenyl 2-(trimethylsilyl)ethynylsulfone 32503-34-7, Tetrahexylammonium hydrogensulfate 32770-99-3 33100-27-5, 1,4,7,10,13-Pentaoxacyclopentadecane 33295-85-1 33369-45-8 33462-80-5, 3-(Chloropropyl)diphenylsulfonium tetrafluoroborate 33512-26-4, Diethyl(phthalimidomethyl)phosphonate 33601-77-3, 3-Chloroquinuclidine hydrochloride 33625-43-3 33797-51-2 33941-15-0 34006-16-1 34289-60-6 34771-28-3, 1-Methylurazole 34803-66-2, 1-(2-Pyridyl)piperazine 34817-42-0 34836-53-8, Trimethylphosphite copper iodide 35386-24-4, 1-(2-Methoxyphenyl)piperazine 35675-80-0, Methyltrioctylammonium bromide 36038-81-0 36315-01-2, 2-Amino-4,6-dimethoxypyrimidine 36338-04-2, 1,4,7,10,13-Pentathiacyclopentadecane 36518-76-0 36635-61-7, Tosylmethyl isocyanide 36744-90-8 36768-62-4, 4-Amino-2,2,6,6-tetramethylpiperidine 36838-63-8 36951-72-1 37026-88-3, Methyl tributyl ammonium bromide 37622-90-5, Ethyl 4-pyrazolecarboxylate 37640-57-6 37687-24-4 37718-11-9, 4-Pyrazolecarboxylic acid 37943-90-1, Diphenyl-2-pyridylphosphine 38184-47-3 38205-60-6, 5-Acetyl-2,4-dimethylthiazole 38353-09-2, 2-Hydroxypyrimidine hydrochloride 38585-62-5, 4-Methyl-5-imidazole methanol hydrochloride 38894-11-0 38932-80-8, Tetrabutylammonium tribromide 39127-10-1, 1-Heptyl-4-(4-pyridyl)pyridinium bromide 39267-74-8, 6-Hydroxy-2,4,5-triaminopyrimidine sulfate 39416-48-3, Pyridinium bromide perbromide 39795-01-2, 1-Ethyl-4-phenylpyridinium iodide 39890-42-1 39890-45-4, 1-(Pyrrolidinocarbonylmethyl)piperazine 39890-46-5, 1-(Morpholinocarbonylmethyl)piperazine 39896-06-5, Quinuclidine hydrochloride 39910-98-0 40064-34-4 40217-17-2 40316-60-7, Thiochroman-4-ol 40580-83-4, Harmol hydrochloride 40675-60-3 40817-03-6 40817-08-1 40899-71-6, 1-(Phenylsulfonyl)indole 41066-08-4, Neocuproine hydrochloride 41122-70-7, 4'-Hexyl-4-biphenylcarbonitrile 41122-71-8, 4'-Heptyl-4-biphenylcarbonitrile 41203-22-9, 1,4,8,11-Tetramethyl-1,4,8,11-tetraazacyclotetradecane 41253-21-8 41371-53-3 41424-11-7 41468-25-1 41680-34-6, 3-Amino-4-pyrazolecarboxylic acid 41775-76-2, 1,4,7-Trioxa-10-azacyclododecane 41840-28-2 41840-29-3 41994-51-8, 1,2,3,4-Tetrahydro-3-isoquinolinecarboxylic acid hydrochloride 42134-49-6 42383-61-9, 2-Aminoimidazole sulfate 42482-06-4, 2-Octen-1-ylsuccinic anhydride 45534-08-5 49619-58-1 49647-58-7, 2,4,5,6-Tetraaminopyrimidine sulfate 49721-45-1 49762-08-5 49805-30-3, 2-Azabicyclo[2.2.1]hept-5-en-3-one 50681-25-9, 4-Pyridazinecarboxylic acid 50743-19-6 50743-32-3 50744-78-0, QUAB 342 50865-01-5 50887-69-9, Orotic acid monohydrate 50995-95-4, 2-Propylimidazole 51175-59-8 51410-72-1, [3-(Methacryloyl amino) propyl]trimethyl ammonium chloride 51716-63-3 51717-23-8 51800-98-7 51800-99-8 51812-80-7, QUATERNIUM 22 51868-96-3 52094-70-9 52185-74-7

52215-12-0, Pyrrolidone hydrotribromide 52253-69-7,
2-Amino-4-phenylthiazole hydrobromide monohydrate 52364-71-3
52364-72-4, 4'-Heptyloxy-4-biphenylcarbonitrile 52364-73-5,
4'-(Octyloxy)-4-biphenylcarbonitrile 52417-22-8 52434-90-9,
Tris(2,3-dibromopropylisocyanurate) 52502-66-6,
4,5-Diamino-6-hydroxypyrimidine sulfate 52509-14-5,
(1,3-Dioxolan-2-ylmethyl)triphenylphosphonium bromide 52547-00-9,
5-Amino-3-methylisothiazole hydrochloride 52547-07-6 52709-84-9,
4'-Octyl-4-biphenylcarbonitrile 53054-76-5, 4-Pyridine
ethanesulfonic acid 53266-94-7, Ethyl 2-amino-4-thiazole acetate
53551-92-1, 3-Methyl-1-vinylpyrazole 53636-70-7,
6-Methyl-2,3-pyridine dicarboxylic acid 53721-12-3,
1,1'-Diethyl-4,4'-bipyridinium dibromide 53732-41-5 54016-70-5
54063-35-3, DESOGEN 54418-69-8 54483-22-6 55094-96-7
55482-27-4, Biliverdin dihydrochloride 55704-78-4,
2,5-Dihydroxy-2,5-dimethyl-1,4-dithiane 55750-06-6 55959-84-7,
2-Hydrazino-2-imidazoline hydrobromide 56010-88-9,
4-Methylpyrazole hydrochloride 56187-09-8 56375-79-2, Methyl
tributyl ammonium chloride 56824-22-7, 2-(2-Chloroethyl)-1-
methylpyrrolidine hydrochloride 57105-39-2 57105-42-7
57105-45-0 57105-50-7 57260-70-5 57260-71-6 57500-00-2,
Furfurylmethyldisulfide
RL: DEV (Device component use); TEM (Technical or engineered
material use); USES (Uses)
(transparentizing agent for electrophotog. migration imaging
members)

IT 57575-15-2 58002-62-3 58052-80-5 59159-39-6 59218-87-0,
Tris(dimethylamino)sulfonium difluorotrimethyl silicate
59431-14-0, Methylthiomethylphenylsulfone 59662-65-6 59709-57-8
59997-51-2, 4,4-Dimethyl-3-oxopentanenitrile 60126-29-6,
2-Methyl-3-propylbenzothiazolium iodide 60147-18-4,
3,6,9,14-Tetrathiabicyclo[9.2.1]tetradeca-11,13-diene 60222-90-4
60754-76-9 60835-69-0 60835-71-4, 4'-Aminobenzo-15-crown-5
60835-73-6, 4'-Formylbenzo-15-crown-5 60845-81-0 61175-77-7,
Butyl tripropyl ammonium bromide 61204-01-1 61260-55-7
61296-22-8 61540-35-0 61699-62-5, 3,4-Diisopropoxy-3-cyclobutene-
1,2-dione 61914-03-2, 3-Chloro-2-norbornanone 62437-99-4,
2-Hydrazinopyridine dihydrochloride 62942-43-2,
(Formylmethyl)triphenylphosphonium chloride 63212-53-3
63234-71-9, 1-Aminopyrrolidine hydrochloride 63462-99-7,
Tetraoctadecyl ammonium bromide 63972-19-0, 1,4,8,11-
Tetraazacyclotetradecane-5,7-dione 64113-84-4,
2-Fluoro-5-methylbenzonitrile 64156-20-3, QUATERNIUM 26
64168-11-2 64387-67-3 64415-08-3 64415-14-1 64485-82-1
64987-03-7 64987-05-9 64987-08-2 65383-61-1,
6,7-Dimethoxy-2,2-dimethyl-4-chromanone 65463-54-9 65463-64-1
65497-29-2 65872-41-5 65872-43-7 66065-85-8 66943-05-3,
1,4,7,10-Tetraoxa-13-azacyclopentadecane 67066-88-0,
2-Octadecen-1-ylsuccinic anhydride 67174-68-9 68399-77-9
68922-17-8 68922-18-9, 2-Pyridine ethanesulfonic acid 69092-41-7
69225-59-8, 1,4-Cyclohexanedione mono-2,2-dimethyl trimethylene
ketal 69271-98-3 69458-20-4 69703-25-9 69703-98-6
69812-29-9, 2-Acetamido-4-methyl-5-thiazolesulfonyl chloride
69891-92-5, 2-(1,3-Dioxan-2-yl)ethyl]triphenylphosphonium bromide
70206-24-5, Varisoft 3690 70340-04-4, (2-
Hydroxybenzyl)triphenylphosphonium bromide 70700-35-5,
[2-(4-Nitrophenyl)allyl]trimethyl ammonium iodide 70715-18-3
70892-82-9 71254-91-6 71574-33-9 73107-26-3 73476-18-3,

Phenyl 2-(trimethylsilyl)ethylsulfone 73579-08-5, 1-Methyl-4-(methylamino)piperidine 73955-61-0 74261-65-7 74385-09-4 74718-18-6 74718-19-7 75460-28-5 75507-25-4, 2-(Hydroxymethyl)-15-crown-5 75507-26-5 75708-92-8, Folic acid dihydrate 75866-72-7 75980-60-8, Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide 77431-49-3, Glycolaldehyde dimer 77532-79-7, 5-Fluoro-2-methylbenzonitrile 78348-24-0 78508-96-0 78902-09-7, Phthalimidoacetaldehyde diethyl acetal 78984-88-0 79676-97-4 79720-19-7 80106-50-9 80789-76-0 80866-74-6 80866-84-8, 1-Ethyl-3-hydroxypyridinium bromide 80965-30-6 80997-85-9 81012-96-6 81104-52-1 81658-46-0 81658-47-1 82105-88-2, (4-Ethoxybenzyl)triphenylphosphonium bromide 82372-35-8 82373-92-0 82737-61-9, 2,4-Bis(methylthio)-1,3-dithia-2,4-diphosphetane-2,4-disulfide 83585-56-2, 2-(Aminomethyl)-15-crown-5 83585-61-9 84030-20-6 84752-61-4 85153-19-1, Hydroquinine hydrobromide 85169-31-9, Heptyl tributyl ammonium bromide 85264-33-1, 3,5-Dimethylpyrazole-1-methanol 85391-19-1 85706-52-1, 3,9,10-Tribromocamphor 85706-53-2 86023-17-8 86421-35-4 86944-00-5, 1,5-Dithiacyclooctan-3-ol 87022-42-2 88630-42-6, 2-(NN-Butylcarbamoyl)-1,2,3,4-tetrahydroisoquinoline 89983-14-2 90283-04-8, SCHERCOQUAT ALA 92412-67-4 92412-69-6 92444-14-9 94395-49-0, MONAQUAT P-TC 94616-61-2 96478-09-0 96754-03-9 96898-10-1 97763-34-3 98169-56-3 100017-18-3 102306-78-5 102783-80-2 103723-70-2, 4-Isopropyl-2-oxazolidinone 104569-90-6 104612-35-3 104954-50-9, 3-Amino-2,6-dimethoxypyridine hydrochloride 105262-58-6 106917-30-0 106917-31-1 109282-37-3 109909-33-3, 1,5,9,13-Tetrathiacyclohexadecane-3,11-diol 111381-84-1, 1,4,7-Trithiacyclodecane 115035-43-3 116295-66-0 116295-72-8 116912-58-4, 1,5,9,13,17,21-Hexathiacyclotetracosane-3,11,19-triol 118337-09-0 119812-51-0 120407-07-0 123333-49-3 123333-53-9 123333-74-4 123334-15-6 130888-29-8 132256-97-4, 3-Bromobutyl triphenylphosphonium bromide 132268-32-7 133819-59-7, 1,4,7,10,13,16,19,22-Octathiacyclotetracosane 138224-69-8, 1-Docosyl-4-(4-hydroxystyryl)pyridinium bromide 139653-55-7, Tetrahexadecylammonium bromide 141693-19-8 145100-51-2 146346-92-1, 4-Butoxybenzyltriphenylphosphonium bromide 146437-79-8, Di-tert-butyldibenzo-18-crown-6 157584-19-5 161069-06-3, BTC 1100 161279-79-4, JET QUAT S-2C-50 161279-81-8, SCHERCOQUAT ROAB 161279-82-9, SCHERCOQUAT ROAS 161279-83-0, SCHERCOQUAT ROEP 161279-84-1, SCHERCOQUAT SOAB 162844-79-3 162874-77-3, Carsosoft S-90 179606-28-1, Lexquat AMG-WC 179990-25-1 179990-27-3 179990-28-4 179990-29-5 179990-30-8 179990-31-9 179990-32-0 179990-33-1 179990-34-2 179990-35-3 179990-36-4 180515-56-4
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(transparentizing agent for electrophotog. migration imaging members)

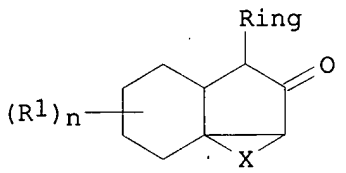
L13 ANSWER 6 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
(ALL HITs ARE ITERATION INCOMPLETES)
ACCESSION NUMBER: 124:317532 MARPAT
TITLE: Antiviral compounds and pharmaceutical compositions
INVENTOR(S): De La Fuente, Jesus Angel; Marugan, Juan Jose; Cross, Sue S.
PATENT ASSIGNEE(S): Pharma Mar, S.A., Spain

SOURCE: Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 695746	A2	19960207	EP 1995-305336	19950731
EP 695746	A3	19960821		
R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
CA 2155067	AA	19960202	CA 1995-2155067	19950731
JP 08208635	A2	19960813	JP 1995-196902	19950801

PRIORITY APPLN. INFO.: US 1994-283732 19940801

GI



I

AB The present invention provides novel compds. I and novel pharmaceutical compns. which possess antiviral activity, particularly against retroviruses. The compns. comprise a pharmaceutically acceptable carrier, diluent or excipient, and an effective antiviral amt., preferably anti-retroviral effective amt. of a compd. having the following generic formula:. Wherein X is selected from the group consisting of O and S; n is an integer of from 1 to 9, each R1 is independently selected from the group consisting of hydrogen, C1 to C4 lower alkyl group (or others); and Ring is a C2 to C6 ring system contg. up to three double bonds, and up to three heteroatoms selected from nitrogen, sulfur and/or oxygen.

IC ICM C07D303-04
ICS C07D409-04; A61K031-335; A61K031-38; A61K031-34
CC 30-15 (Terpenes and Terpenoids)
Section cross-reference(s): 1, 27
ST perhydroindanone deriv antiviral activity retrovirus
IT Acquired immune deficiency syndrome
Pharmaceutical dosage forms
Virucides and Virustats
(aryl- and heteroarylperhydroindanone derivs. as antiviral compds.)
IT Sesquiterpenes and Sesquiterpenoids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(aryl- and heteroarylperhydroindanone derivs. as antiviral compds.)

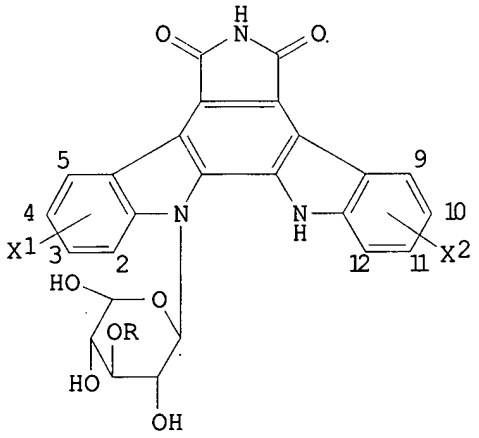
IT Toxicity
(cytotoxicity, aryl- and heteroarylperhydroindanone derivs. as antiviral compds.)
IT Virus, animal
(human immunodeficiency 1, aryl- and heteroarylperhydroindanone derivs. as antiviral compds.)
IT 167937-11-3P 167937-12-4P 176019-29-7P 176019-30-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(aryl- and heteroarylperhydroindanone derivs. as antiviral compds.)
IT 124070-99-1 175873-20-8 175873-21-9 176019-31-1
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(aryl- and heteroarylperhydroindanone derivs. as antiviral compds.)

L13 ANSWER 7 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 116:82217 MARPAT
TITLE: Biosynthesis of rebeccamycin analogs by tryptophan analogs feeding
INVENTOR(S): Lam, Kin Sing; Schroeder, Daniel R.; Mattei, Jacqueline; Forenza, Salvatore; Matson, James A.
PATENT ASSIGNEE(S): Bristol-Myers Squibb Co., USA
SOURCE: Eur. Pat. Appl., 39 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 450327	A1	19911009	EP 1991-103316	19910305
EP 450327	B1	19960605		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
IL 97233	A1	19950330	IL 1991-97233	19910214
FI 9101047	A	19910907	FI 1991-1047	19910301
CA 2037783	AA	19910907	CA 1991-2037783	19910305
CA 2037783	C	19951017		
NO 9100855	A	19910909	NO 1991-855	19910305
NO 179555	B	19960722		
NO 179555	C	19961030		
AU 9172616	A1	19910912	AU 1991-72616	19910305
AU 623050	B2	19920430		
ZA 9101613	A	19911127	ZA 1991-1613	19910305
HU 61601	A2	19930128	HU 1991-716	19910305
HU 211055	B	19951030		
JP 07089981	A2	19950404	JP 1991-38752	19910305
JP 07080899	B4	19950830		
AT 138926	E	19960615	AT 1991-103316	19910305
ES 2088439	T3	19960816	ES 1991-103316	19910305
CZ 279307	B6	19950412	CZ 1991-586	19910306
SK 278338	B6	19961204	SK 1991-586	19910306
US 5468849	A	19951121	US 1994-216075	19940321

PRIORITY APPLN. INFO.: US 1990-489430 19900306
US 1991-648751 19910205
US 1993-60951 19930513

GI



I

AB Rebeccamycin analogs (I; X1, X2 = H, F; provided that both X1, X2 .noteq. H; R = H, Me) are manufd. by cultivating a rebeccamycin-producing strain of Saccharothrix aerocolonigenes ATCC 39243 in an aq. nutrient medium in the presence of a tryptophan analog. For optimal prodn. of I (X1 = 5-F, X2 = 9-F; R = H, Me), I (X1 = 4-F, X2 = 10-F; R = H, Me), I (X1 = 3-F, X2 = 11-F; R = H, Me), and I (X1 = 2-F, X2 = 12-F; R = H, Me), the medium is supplemented with DL-4-, 5-, 6-, and 7-fluorotryptophan, resp. I (X1 = 3-F, X2 = 10-F, R = Me) at 512 mg/kg i.p. prolonged the median survival time of mice implanted with P388 leukemia cells with a percent T/C of 206%.

IC ICM C07H019-04
ICS C12P019-28; A61K031-71
CC 16-2 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 10, 63
ST rebeccamycin fluoro analog manuf antitumor; Saccharothrix aerocolonigenes manuf dechlorofluororebeccamycin analog; fluorotryptophan fermn dechlorofluororebeccamycin analog
IT Neoplasm inhibitors
(didechlorodifluororebeccamycins)
IT Saccharothrix aerocolonigenes
(fermn. of DL-fluorotryptophans with, antitumor didechlorodifluororebeccamycins from)
IT Fermentation
(of DL-fluorotryptophans with Saccharothrix aerocolonigenes, antitumor didechlorodifluororebeccamycins from)
IT 154-08-5, DL-5-Fluorotryptophan 7730-20-3, DL-6-Fluorotryptophan 25631-05-4, DL-4-Fluorotryptophan 53314-95-7
RL: PROC (Process)
(fermn. of, with Saccharothrix aerocolonigenes, antitumor didechlorodifluororebeccamycin from)
IT 138829-46-6P 138829-47-7P 138829-48-8P 138829-49-9P
138829-50-2P 138829-51-3P 138829-52-4P 138829-53-5P

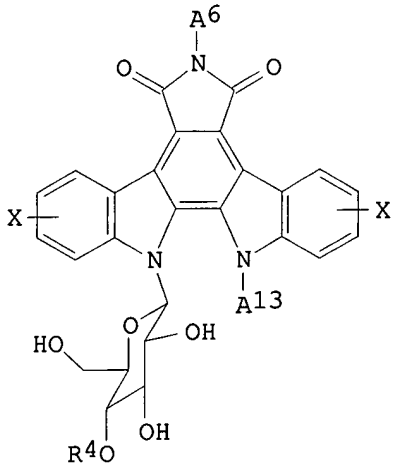
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, by fermn. of DL-fluorotryptophan with Saccharothrix aerocolonigenes, as antitumor agent)

IT 93908-02-2DP, Rebeccamycin, didechlorodifluoro analogs
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, by fermn. of DL-fluorotryptophan with Saccharothrix aerocolonigenes, as antitumor agents)

L13 ANSWER 8 OF 8 MARPAT COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 110:135647 MARPAT
TITLE: Preparation of rebeccamycin analogs as antitumors and pharmaceutical compositions containing them
INVENTOR(S): Kaneko, Takushi; Wong, Henry S.; Utzig, Jacob J.
PATENT ASSIGNEE(S): Bristol-Myers Co., USA
SOURCE: Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 269025	A2	19880601	EP 1987-117167	19871120
EP 269025	A3	19900829		
EP 269025	B1	19930113		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 4785085	A	19881115	US 1986-933428	19861121
AU 8781148	A1	19880526	AU 1987-81148	19871112
AU 614068	B2	19910822		
CS 265248	B2	19891013	CS 1987-8249	19871117
FI 8705091	A	19880522	FI 1987-5091	19871118
FI 86189	B	19920415		
FI 86189	C	19920727		
IL 84515	A1	19911121	IL 1987-84515	19871118
DK 8706129	A	19880522	DK 1987-6129	19871120
DK 165986	B	19930222		
DK 165986	C	19930719		
NO 8704857	A	19880524	NO 1987-4857	19871120
NO 167741	B	19910826		
NO 167741	C	19911204		
ZA 8708714	A	19880727	ZA 1987-8714	19871120
HU 45543	A2	19880728	HU 1987-5164	19871120
HU 201773	B	19901228		
CN 87107928	A	19880810	CN 1987-107928	19871120
CN 1019806	B	19921230		
JP 63198695	A2	19880817	JP 1987-293854	19871120
JP 05000400	B4	19930105		
CA 1287349	A1	19910806	CA 1987-552337	19871120
AT 84539	E	19930115	AT 1987-117167	19871120
ES 2053510	T3	19940801	ES 1987-117167	19871120
US 4808613	A	19890228	US 1988-169785	19880318
PRIORITY APPLN. INFO.:			US 1986-933428	19861121
			EP 1987-117167	19871120

GI



I

AB The title compds. [I; A6, A13 = (CH2)nR1R2; R1, R2 = H, alkyl, aralkyl, (un)substituted phenyl; or R1R2 = (oxa)(aza)alkylene; R4 = H, Me; n = integer 1-6; X = H, F, Cl, Br, alkyl, OH, CO2H, alkoxycarbonyl, alkoxy, benzyloxy, amino, mono- and dialkylamino] and their pharmaceutically acceptable salts, useful as antitumors, are prepd. and used in pharmaceutical compns. A mixt. of rebeccamycin and NaH in DMF was stirred at room temp. for 20 min, ClCH2CH2NEt2 added, and the resulting mixt. stirred for 24 h to give 6-(2-diethylaminoethyl)rebeccamycin (II). In a test using mouse leukemia P-388 tumor cells II.HCl at 8 mg/kg i.p. showed a redn. of 0.4 g in tumor size on the 4th day and a mean survival time (MST) of 12.0 days vs. a tumor redn. of 2.0 g and a MST of 19.0 days for mitomycin C.

IC ICM C07H019-044
ICS A61K031-70

CC 33-7 (Carbohydrates)
Section cross-reference(s): 1

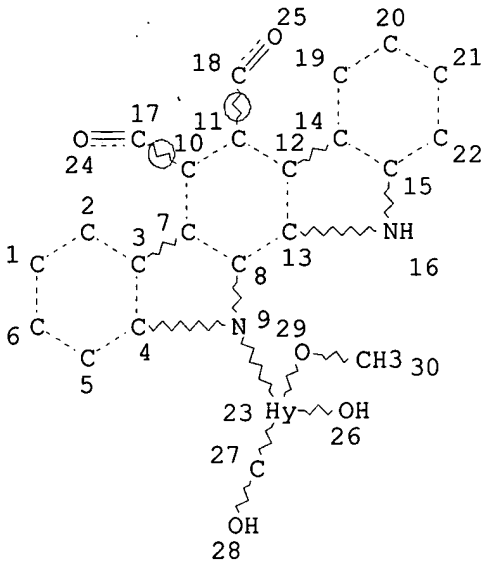
ST rebeccamycin analog prepn antitumor

IT Neoplasm inhibitors
(rebeccamycin analogs)

IT 100-35-6, 2-(Diethylamino)ethyl chloride 104-77-8, 3-(Diethylamino)propyl chloride 93908-02-2, Rebeccamycin
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, by aminoalkyl halide)

IT 119673-08-4P 119673-09-5P 119673-10-8P 119673-11-9P 119673-12-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of, as antitumor agent)

FILE 'MARPATPREV' ENTERED AT 15:48:10 ON 09 SEP 2003
L3 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 23
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E1 O AT 23

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

ATTRIBUTES SPECIFIED AT SEARCH-TIME:
ECLEVEL IS LIM ON ALL NODES
ALL RING(S) ARE ISOLATED

L14 0 SEA FILE=MARPATPREV SSS FUL L3 (MODIFIED ATTRIBUTES)

100.0% PROCESSED 8 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FILE 'HOME' ENTERED AT 15:48:30 ON 09 SEP 2003